RSA

Pupil Design Awards

Teacher resource pack 2023–24

The Pupil Design Awards has been a positive way for pupils to connect with their own stories and communities.

Teachers, Pupil Design Awards

Contents

Introduction

Calling all students and educators, at the RSA, we are working towards a world where people, places and the planet flourish in harmony. And we need your creative potential to help weave the tapestry of our collective future!

Through our incredible projects, research, and collaborations, combined with our 31,000 strong global Fellowship, we have long created the conditions for transformative ideas to be spun. This year is extra special as it's the 100th year of our Student Design Awards and the 10th year of Pupil Design Awards.

We hope you take this opportunity to lace your ingenuity with the world's longest running design competition. Can you apply your learning to create innovative, life-centric solutions that address real-world social and business challenges? By taking part, you'll be joining a century-strong alumni of forward-thinking changemakers.

No matter your life experience or what you're into – media, geography, robotics, philosophy, theatre, activism - we hope you are inspired by these challenges and know you are invited to join. In fact, it's only through braiding together multiple perspectives and talents that we will be able to design solutions that mend the world's fabric.

The RSA Pupil Design Awards aims to encourage young people and their teachers to join us in this mission. The Awards' vision is one in which young people develop creative self-efficacy through engaging with real-world problems and leave school with the agency and capabilities which enable them to flourish in their personal lives and contribute to the flourishing of their communities. We do this by:

- Broadening teachers' and pupils' knowledge of how **social design** can be applied and understood through challenging, relevant briefs and comprehensive judging criteria.

- Introducing s**ocial design thinking** to teachers and pupils through interactive workshops delivered in collaboration with design education experts.

- Connecting schools to their local communities and enabling pupils to design solutions to local and global contemporary challenges.

The Pupil Design Awards is modelled on the RSA's prestigious Student Design Awards for university students. It is a national design awards programme for secondary school and sixth-form pupils aged 11-17. Whilst we have in the past run the awards as a competition, this year the emphasis of the awards will be on celebrating the design thinking process that all participating pupils and teachers go through. We provide a range of briefs related to important social issues and ask pupils to develop innovative proposals to problems they identify themselves. The design process requires pupils to identify different design opportunities and refine ideas through research and development. Proposals are submitted towards the end of the academic year and are then reviewed by an expert panel who provide invaluable feedback to pupils. All pupils completing the programme will receive an award and special commendations will be invited to an awards day celebration at RSA House.

About the Pupil Design Awards:

The RSA Pupil Design Awards is a free UK-wide design awards programme for pupils aged 11-17. Pupils are encouraged to use their creativity and imagination to tackle real challenges facing people and the planet. Schools are provided with lesson plans, training, and mentors to support participation. Teams or individuals submit design proposals and material explaining how they approached their problem. All submitted proposals will receive feedback from expert reviewers and will have their proposal profiled on the RSA website.

This Teacher Resource Pack has been designed to support you in delivering the RSA Pupil Design Awards. In the pack you will find a suggested seven-week scheme of work.

The 2023-24 RSA Pupil Design Awards are brought to you by: The Comino Foundation and the Rayne Foundation.
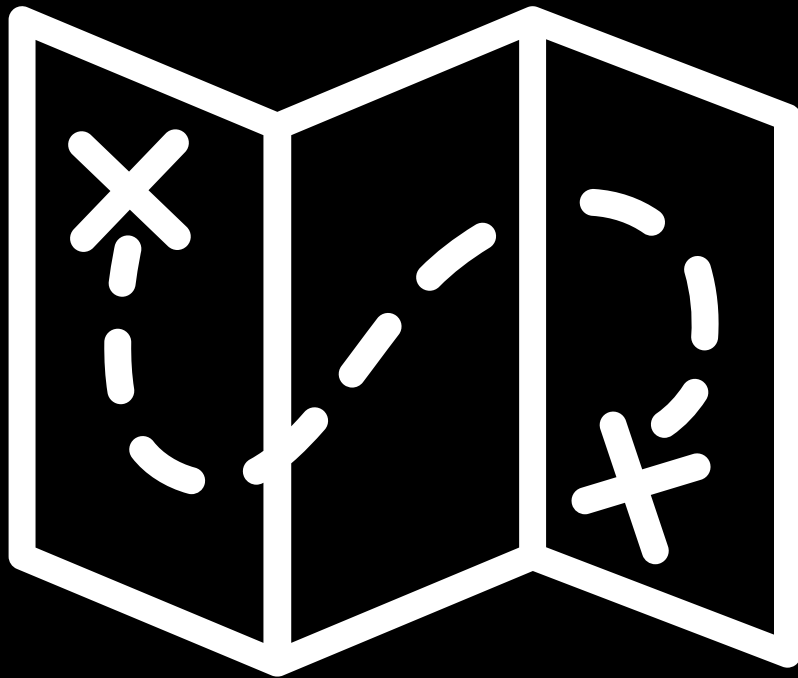
We know amongst you there is an abundance of potential, appetite, and determination to address the challenges of today and paint tomorrow with hope.

We can't wait to see what's in store this year!

Anna Markland, Head of Innovation and the Design Awards Team

PART 1
TEACHER OVERVIEW

Awards timeline

November

Awards launch

New briefs and resources are uploaded on to our website, and registration is live.

Nov - Dec

Education engagement

Engagement opportunities including teacher workshops.

Feb - Mar

Mentor visits

Support on your proposals from professional designers and former winners of the Student Design Awards.

Late March

Submissions open

Online submission platform opens for teachers to upload their pupils' work.

Late April

Submissions close

Online submission platform closes. We will provide updated timelines as the year progresses.

May

Evaluation

All entries will be reviewed by experts who provide invaluable feedback to students.

June

Awards ceremony

All entrants will receive an award and special commendations will be invited to an awards day celebration at RSA House.

Design thinking

We believe that design is about more than making beautiful things. Design can be used to solve problems and improve people's lives. This is what we call **social design**. This pack aims to support you in encouraging your pupils to develop the mindsets that are integral to arriving at innovative, impactful ideas. The RSA Pupil Design Awards is about pupils going on a journey through the design thinking process, that builds their ability to creatively solve problems with insights from their peers and the world around them.

The non-linear design thinking process

Research and insight

Reframe the problem

Ideate

Prototype and test

Refine and communicate
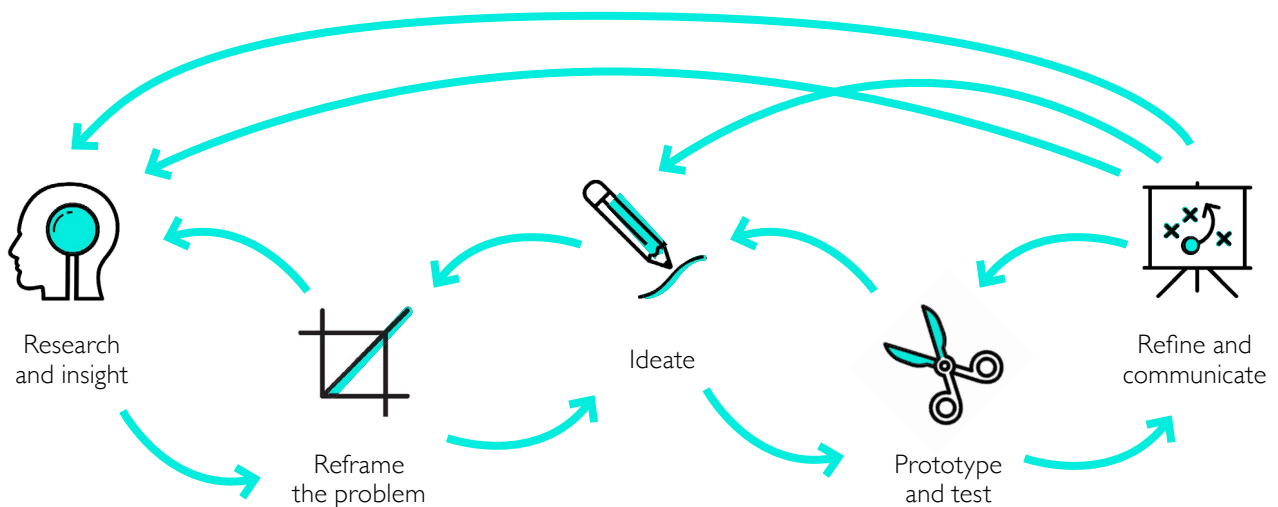
Through the Pupil Design Awards we describe **design thinking** as a process and a mindset used to tackle complex problems. It can help pupils explore new alternatives and to imagine and bring to life ideas that didn't exist before. It offers an opportunity to design with communities, to deeply understand the people they're looking to support, to be creative, and to come up with new answers that respond to people's needs and motivations. It is a flexible and non-linear process, where pupils can go back and forth as many times as they need to reach an idea that addresses the problem they have identified.

Evaluation criteria

Your proposals will be evaluated based on the following criteria:

1

Social and environmental impact:

- How does the proposal make a positive difference for people and/or the natural world?
- How does the final proposal consider diverse needs and equitable ways to meet those needs?
- How does the proposal engage with the local community in its chosen context?
- How does the proposal consider using materials, processes, and resources in a sustainable way?

2

Rigorous research and compelling insights:

- Has the pupil/team undertaken first-hand research by identifying the needs and motivations of people affected by the problem in your brief?
- Has the pupil/team conducted research into the wider context of the problem on the internet or through reading material?
- How does the proposal build on key insights grounded in people's needs and motivations, and gained through wider research?
- How does the proposal incorporate feedback and testing through prototyping and iteration?

3

Viability:

- Has the pupil/team considered how the proposal will work in practice?
- Has the pupil/team considered the cost of the proposal and how it might be funded and sustained?
- Has the pupil/team identified any potential barriers that might prevent the proposal working in practice? How might these be overcome?
- Has the pupil/team considered how they would measure the success of their proposal if it became a reality?

4

Creativity and innovation:

- How is the proposal different from existing solutions? How might it be better or more useful?
- What unexpected or surprising elements are included in the proposal? What value do these add to the idea?

How to submit your work

You may work as a team or individually. To submit your work into the RSA Pupil Design Awards you will need to present your proposal on **six A3 boards.** These six boards need to tell the story of your design thinking process from research to final idea. The experts will be looking for the story of how your design developed over time. When the experts first look at your work, you won't be there to explain it, so your six boards need to do all the explaining for you!
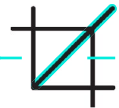
The six boards:

1. Research

- What design brief are you tackling?
- What research have you done to investigate the challenge and understand how the people/environment are affected?
- How did you conduct some primary research to understand the issue better?

2. Findings

- What is the specific problem you are focusing on?
- What were your key findings from your research?
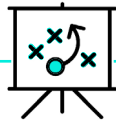- What were your insights from your research?

3. Ideation

- How have you explored potential ideas?
- What ideas did you decide to explore further?
- What was successful/unsuccessful about them?
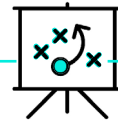
4. Testing & Development

- How did you test your idea?
- Who did you ask for feedback?
- How did you incorporate feedback into your proposal?

5. Impact

- How could your proposal work in the real world?
- What could be the challenges you might face when putting your proposal into the real world?
- What positive impact will your proposal have?

6. Final Idea

- Tell us about your final idea in one statement.
- Who is your proposal aimed at and why?
- What makes it different to existing solutions?

Scheme of work

Week 1

Objective	Outcome	Resources
To (i) introduce design thinking, (ii) explore social design, and (iii) introduce the awards briefs.	**1** Pupils have formed their groups or decided to work indivdually. **2** Pupils have read the brief pack and chosen a brief. **3** Pupils begin to have an idea of the challenges they will research further.	— Pupil Design Awards animation — 'The Power of Design' video — 'How to Approach a Brief' video — The three awards briefs

Week 2

Objective	Outcome	Resources
To (i) research information for the chosen brief, (ii) identify a target audience, and (iii) delegate research responsibilities amongst the team.	**1** Pupils should understand how to select research relevant to their context. **2** Pupils should be able to identify areas where further investigation is needed before developing design ideas. **3** Pupils should be able to identify, explain the characteristics of, and justify their choice of target audience in relation to their chosen brief.	— Pupil Response Sheet

Week 3

Objective	Outcome	Resources
To (i) plan the research pupils will carry out with real people / organisations, (ii) devise research questions.	**1** Pupils should understand how to plan primary research activities, and should have a plan for carrying out user research independently after this lesson. **2** Pupils should be able to analyse successes and weaknesses in interview technique and apply this knowledge to carrying out their own interviews.	— Researching with people worksheets

Tip: Encourage pupils to start their boards as early as possible, they should be an evolving document that they revisit throughout the design process!

Tip: Support your pupils to make their boards visual. Judges won't have time to read through a lot of text, so they need to consider the communication design of their proposal.

Week 4

Objective	Outcome	Resources
To (i) identify initial ideas for the project based on research findings and (ii) describe or visualise ideas.	**3** Pupils should be able to use their research to develop their ideas, demonstrating that the idea is clearly linked to information gathered during research activities. **4** Pupils should be able use a variety of methods to help generate a wide range of ideas. **5** Pupils should be able to communicate their ideas to someone else in different ways.	— Examples of mind maps and product design sketches

Week 5

Objective	Outcome	Resources
To (i) test ideas against target audience feedback, (ii) develop initial ideas towards a single, final idea.	**6** Pupils should demonstrate a critical approach to testing and evaluating their ideas. **7** Pupils should use the feedback of others in addition to their own opinions to test and evaluate their ideas. **8** Pupils should apply the result of their testing and evaluation to identify clear ways to develop their ideas further.	

Week 6

Objective	Outcome	Resources
To build, refine and complete final idea.	**9** Pupils should take action based on feedback from their target audience and peers. **10** Pupils' proposals should clearly reflect the needs of their target audience.	— Examples of previous submissions

Week 7

Objective	Outcome	Resources
Create final portfolio by completing submission boards. Refining presentation until pupils are confident in their submission.	**11** Pupils should be able to use advice and success criteria to make decisions about the communication of their project. **12** Pupils should be able to communicate effectively by telling a story visually through their boards.	— Evaluation Criteria

Teacher insights

As well as inspiring young people to engage in social change through design thinking, we also hope to create a community of teachers who can learn, collaborate and connect with each other. Many of you will be new to the Awards, but we are also fortunate enough to have many schools that return each year. We've collected some key insights from some of these teachers to support you with planning and delivering the Awards in your own classroom.

Structuring the Awards:

I have run the PDAs as both a formal classroom-based activity and as an extracurricular club. I found the issue with classroom activities was the time constraints which prevented the students from really investigating the brief for a longer period of time.

We make links with employability skills such as strong communication and working to deadlines and we have always linked the competition heavily to teamwork. We try to take a step back with decisions like which team member is responsible for certain elements of the work and encourage them to prepare presentations themselves.

I have always run the PDAs in either the Art lesson or PSHE lesson. Historically, I have always had Years 7 and 8 taking part in the brief. When I have completed the planned lesson time and marked/evaluated the work I have then used lunchtimes to complete/tweak the work before submitting it.

Using the PDAs resources and support:

For mentor visits we tend to book a room at school for the afternoon and take pupils involved off timetable for the session. During this time the pupils all present their progress so far and each group feeds back including the mentor. The mentor visits are not only a good opportunity to hear from each of the groups but also a rare chance for pupils to hear from older students who are used to going through a design process.

I have used the support material as a loose guide. However, having exemplar work was really useful. The student mentor visits were an amazing experience which really helped progress the pupils' work.

Managing the project timeline:

So that pupils do not get preconceived ideas for the brief, I start with a mini project which they then can use within their research. That mini project starts in January. From the information from the brief you give us, I would look at the background and 'what needs to change' part and basic a lesson that covers the main points mentioned. If they are in their Art or DT lesson I would do a design task around it or if in PSHE I would do a discussion task. Then after 4-6 weeks I would introduce the design brief and start the project.

We try to launch the briefs ASAP to give them the opportunity to spend time on research without the pressures of other deadlines/homework that they may have.

We also offer all of the briefs to our students so each year we have groups who are working on lots of varied and unusual project ideas. We have pretty much run the competition from November to April with drop-in sessions for support.

Top tips:

It's not all about the fancy presentation, it's the ideas that matter. I was worried that because we do not have great IT facilities, we wouldn't do as well as others. But that was not the case.

Encourage research as much as possible and try to give the groups time to reflect on the research before designing. Students should not be jumping into designs too early.

Tip: Don't forget you can always contact the RSA team for further support and guidance on how to run the Awards in your school by contacting education@RSA.org.uk.

PART 2

LESSON PLANS
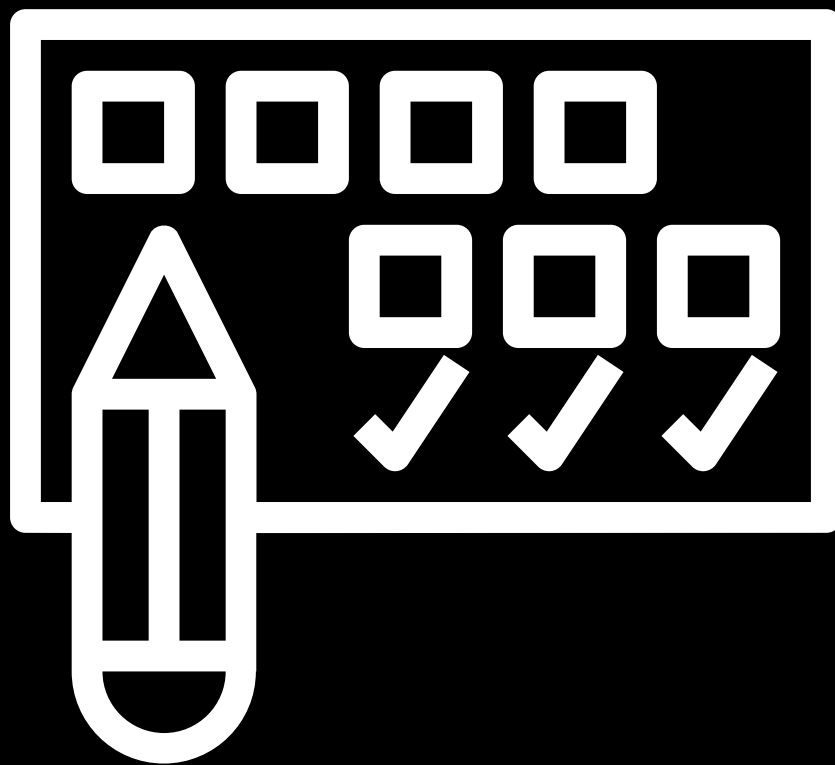
Lesson Plan:
Week 1

Forming a group & choosing a brief

Objective	Outcome	Resources
To introduce design thinking and social design.	**1** Pupils have formed their groups or decided to work individually.	— Pupil Design Awards animation
To understand that design can be used to solve problems.	**2** Pupils have read the brief pack and chosen a brief.	— 'The Power of Design' video
Introduce the awards briefs.	**3** Pupils begin to have an idea of the challenges they will research further.	— 'How to Approach a Brief' video
		— The three awards briefs

Ideas for Starter Activities

Pupils to brainstorm: how has design improved the way we live in today's world? Examples might include: clothing, internet, telephones, fridges, water bottles, etc. When taking feedback from class, explore ideas such as: what problems did the creator respond to, what role design might have played in the process, what mindset might have been needed.

Introduce the Pupil Design Awards: defining what a brief is, how pupils will be working using design thinking, and the submission deadline in March.

Show two videos:

1 Watch the Pupil Design Awards animation, created by SDA alumni Leanne Dooley, to kickstart your pupils projects and introduce the design thinking process.

2 The 'Power of Design' video from Student Design Awards alumni Emma Southgate, who reflects on the way design thinking can be harnessed to tackle problems ranging from household needs to big, social challenges.

Follow this with a Q & A session on the key mindsets and attributes of designers.

Ideas for Main Activities

Many pupils will want to jump straight into creating design ideas. It's okay to reward some of these ideas. However, don't jump straight into final proposals. At this stage we want to get them thinking about identifying challenges to solve - not jumping straight into ideas for an unidentified problem:

You could: show 'How to Approach a Brief' - a short video about tackling new briefs by Andrew Grant RDI.

Introduce **the three briefs** to the class: these can be read aloud from the Competition Pack.

Pupils can work in groups or pairs to **mind map** a summary of each brief, and the potential issues or problems that could be relevant to each brief.

Appoint one person as the scribe and at the end of the session ask another group member to present back to the room the challenges that they identified.

Ideas for Plenary Activities

If working in a group, pupils to record who is in their team members, which brief they will be responding to, and what their discussion has been during the lesson – including what they already know about the issue, initial ideas around who they might want to speak to for further research, and possible ideas they might have started to think about.

Encourage pupils to question their assumptions about the challenges they have identified. This will allow them to start thinking about what they want to explore further.

Note: it would be useful to keep a record of which groups pupils are in (or whether they are working individually) and which brief they have chosen.

Lesson Plan:
Week 2

Secondary Research: Finding Information and an Audience

Objective	Outcome	Resources
To research information for the chosen brief. To identify a target audience. To delegate research responsibilities.	**1** Pupils should understand how to select research relevant to their context. **2** Pupils should be able to identify areas where further investigation is needed before developing design ideas. **3** Pupils should be able to identify, explain the characteristics of, and justify their choice of target audience in relation to their chosen brief.	— A computer room or access to computer for each group. — Pupil Response Sheets

By now, pupils will have chosen which brief they will be working on and completed mind maps that explore the various challenges they could focus on for their project. This week is about researching appropriate information to learn more about the issues.

Ideas for Starter Activities

Pupils to brainstorm, individually: (i) what brief are they focusing on, (ii) what issues will they need to research or learn more about, (iii) what are the different sources of information available to them?

Teacher to take feedback, defining 'secondary research' and the range of sources it might include - e.g. textbooks, newspapers, specific internet sites, published data.

Ideas for Main Activities

Based on insights gained in the starter activity, pupils should decide which secondary research activity they will each carry out.

Pupils should spend time researching more about the brief they are responding to and what possible solutions already exist.

After carrying out secondary research, pause to discuss how this can be used as a basis for primary research, and introduce the concept of a target audience.

Pupils should discuss who their target audience is and what characteristics they have.

Conduct secondary research: findings can be recorded on the Pupil Response worksheet, which requires notes on:

- General research on the issue: where the information has come from, what has been discovered.
- Identifying opportunities: who might the target audience be for this brief? Who could pupils talk to find out more? E.g. from their local community, relevant organisations, or within school.
- Possible proposals: generating different ideas that could be developed further.

Discuss with the class how desk-based research can be used as the basis for effective primary research (or user-focused research). Pupils should be able to identify their target audience and what opportunities might exist to learn more about them.

Ideas for Plenary Activities

Pin these worksheets (and any other ways ideas have been recorded) to an 'ideas board' that has been set up in the classroom to capture your pupils' thinking.

Lesson Plan:
Week 3

Planning Primary Research

Objective	Outcome	Resources
To plan the research pupils will carry out with real people / organisations. To devise research questions.	**1** Pupils should understand how to plan primary research activities, and should have a plan for carrying out user research independently after this lesson. **2** Pupils should be able to analyse successes and weaknesses in interview technique, and apply this knowledge to carrying out their own interviews.	— Tell Stories Template

This next phase of research will build upon the previous session, where pupils will now identify people they can arrange to interview or places where they can undertake visits in order to observe, question and experience. Consideration should be given to practicalities of interviewing, especially when interviewing off school premises.

Ideas for Starter Activities

Pupils to brainstorm: thinking back to their secondary research, create a list of potential people they could speak to learn more about the issues in their brief. It might help to think about (i) within school, (ii) in the local community, (iii) regional or national organisations who might focus on the issue.

Ideas for Main Activities

Use the '**Researching with People' worksheet** so pupils can start to translate some of their insights from research into questions they want to explore further when they are conducting human-centred research. They also need to consider the best form of communication to reach their interviewees; e.g. face-to face interview, telephone call, Skype, WhatsApp, Facetime, letter, text, email etc.

Pupils complete the **'Tell Stories' worksheet**. They will need to complete this sheet after each interview to help them summarise their research findings. Capturing what they have learnt and what they would like to explore further will be key in developing their designs and communicating their design journey on their submission boards.

Ideas for Plenary Activities

Pupils to create a list of questions to ask their target audience, which will help them to understand these people's experience of the challenge students are seeking to address.

Pupils to write down who will conduct interviews (if in a group), when they will be conducted, and how they will record responses.

Lesson Plan:
Week 4

Developing Initial Research

Objective	Outcome	Resources
Identify and form initial ideas for the project based on research findings. Describe or visualise ideas.	**1** Pupils should be able to use their research to develop their ideas, demonstrating that the idea is clearly linked to information gathered during research activities. **2** Pupils should be able use a variety of methods to help them generate a wide range of ideas. **3** Pupils should be able to communicate their ideas to someone else in different ways.	— Examples of mind maps and product design sketches

Ideas for Starter Activities

Pupils to summarise the key themes, ideas, or issues they have found from their primary research on one large sheet of paper.

Ideas for Main Activities

Design sprint! Can the pupils come up with five ideas in ten minutes for one or more of the challenges they have identified from their research so far?

To help to define initial ideas, visualise them in an appropriate manner i.e. storyboard the idea if it is a campaign or service, use drawings or sketches if it is a product.

Pupils can present back to the class, and the class can suggest ideas back.

Pupils should now spend time developing their idea, writing down and brainstorming: (i) what are the main features of the idea, (ii) how does the idea connect to their research findings, (iii) what impact might the idea have in the real world and how/why (iv) what will success look like with this idea, (v) what challenges might the idea face in the real world.

Ideas for Plenary Activities

Pupils prepare and deliver a one minute mock presentation that discusses the idea and the research that led to the idea being created.

Each team or individual records the feedback they receive from teacher and peers.

Lesson Plan:
Week 5

Testing & Development

Objective	Outcome	Resources
To test ideas against target audience feedback, developing initial ideas towards a final one.	**1** Pupils should demonstrate a critical approach to testing and evaluating their ideas. **2** Pupils should use the feedback of others in addition to their own opinions to test and evaluate their ideas. **3** Pupils should apply the result of their testing and evaluation to identify clear ways to develop their ideas further.	

After this lesson, it is important that pupils go back to their target audience and get feedback on their idea. This will enable them to iterate their design further in the next sessions. As a result, it's important that pupils leave this lesson with a clear plan for how and when to get feedback.

Ideas for Starter Activities

Ask pupils to summarise three things they can remember from the Brief Pack about testing and developing ideas. Explain that incorporating the lessons they have learned from research into revised designs is central to creating better proposals.

Ideas for Main Activities

Class discussion: building on the starter activity, ask pupils to revisit their initial ideas and think about how they meet the needs their primary research identified, test these assumptions with the teacher and peers in other groups. Give pupils 10 minutes to revisit and discuss their ideas (focusing on how their ideas are addressing the specific issues they have identified) and then ask each group or individual to share with the class for feedback.

Pupils to create a rough draft of the stories they want to tell on their submission boards.

Ideas for Plenary Activities

Discuss and review findings in groups from the testing that has happened so far.

Create a plan for gathering feedback: if working in groups, who will be responsible for getting feedback, when will it be done, and how will it be recorded?

Lesson Plan:
Week 6

Final Idea

Objective	Outcome		Resources
Build, refine and finalise design.	**1**	Pupils should take action based on feedback from their target audience and peers.	— Examples of previous submissions
	2	Pupils' ideas should clearly reflect the needs of their target audience.	

Ideas for Starter Activities

Each group or pupil summarises the main bits of feedback they have received from their target audience (everyone should have at least three pieces of information).

Looking at the feedback - identify any changes/refinements needed in final design development based on feedback from research.

Ideas for Main Activities

Pupils to work in groups and carry out the refinements to their ideas, based on the feedback collected since the last lesson.

Work on the final submission boards.

Each team or individual completes a one minute mock presentation that presents the final idea and the research that led to the idea being created. The teacher can then provide four minutes of feedback.

Ideas for Plenary Activities

Peer review final idea and record feedback.

Lesson Plan:
Week 7

Presenting Your Work

Objective	Outcome	Resources
Create final portfolio by completing submission boards. Refining presentation until pupils are confident in their submission.	**1** Pupils should be able to use advice and success criteria to make decisions about the communication of their project. **2** Pupils should be able to communicate effectively by telling a story visually through their submission boards.	— Judging Criteria

Ideas for Starter Activities

Discuss and review the judging and assessment criteria in groups. How can this be applied to their own projects?

What were the comments from their mentor - have these been incorporated into the design and the presentation of their idea?

Ideas for Main Activities

Compile final submission boards ensuring the design process is clear, well annotated and presented in line with the judging criteria.

Check for the narrative of each submission - do the six boards tell a story of how the design was created and why it will be an effective proposal?

Give pupils copies of the judging criteria and each group or individual can peer assess other entries before giving feedback.

Make sure work is clean and neat. Do not add the name of the school on the submission boards. You will provide this information using the online submission form.

Ideas for Plenary Activities

Presentation to peers of final submission sheets. Use this experience to practise for the presentation to judges if selected.

PART 3
LESSON RESOURCES
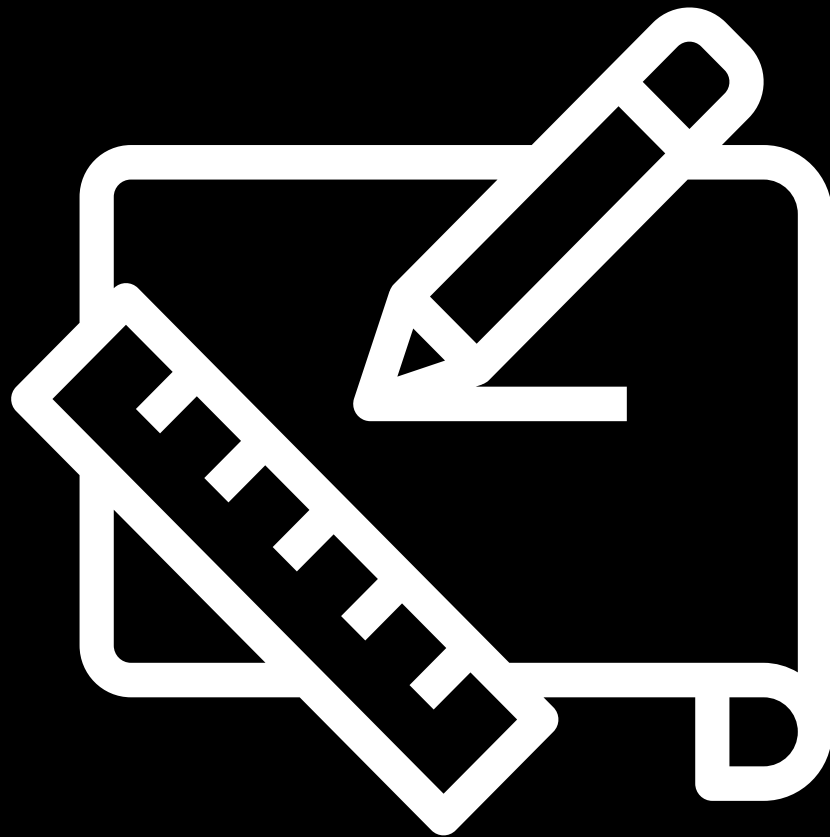
Pupil Response Sheet

1. Research on brief subject

Where I did my research

What I have discovered

2. Identify opportunities

Other people we can talk to to find out more

3. Research Possible Solution:
Could it be a product, service or campaign?

My findings

PREVIOUS SUBMISSIONS

everyone deserves ...AND NIC... RESPEST !!!

LEARN TO Belong

BY, FINLAY...

...EWAN...

Online Reasearch

In April 2019, the government announced new regulations for teaching Relationships and Sex Education in England.

Every young person deserves to see themselves, their family, and the full diversity of our world reflected in their curriculum. This includes teaching about LGBTQ+ identities and issues. While we've made huge strides towards LGBTQ+ equality in recent decades, Nearly half of all LGBT pupils still face bullying for being who they are – and in order to change, it's essential to deliver a curriculum that encourages all children and young people to respect those around them and appreciate difference.

Half of LGBT people (52 per cent) said they have experienced depression in the last year.

Some people when they come out to their parents of being LGBTQ+ they take them to a place to see if anything is wrong with them.

High school can be challenging for any student, but LGBTQ+ youth face additional obstacles of harassment, abuse, and violence. Lesbian, gay, bisexual, transgender and queer bullying is alarming. In fact, 9 out of 10 LGBTQ+ students reported being harassed and bullied last year.

94% of LGBTQ youth reported that recent politics negatively impacted their mental health.

Only 12 percent of LGBTQ+ youth received information about safe sex that was relevant to them as an LGBTQ+ person.
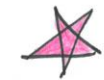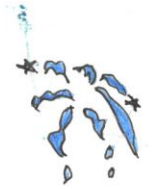
Human Based research

Questionnaire .

What do you think of LGBTQIA+? .

They can be who they want

Your born what you are

Guff/ Way out of hand

Nice work

Rubbish

Normal

100% fine

Its Fine

Do you know what it stands for?

13/23 people knew what it stands for

What is your sexual orientation? .

Pansexual

Genderfluid

Human (they didn't know what it was)

Ally, and have many friends who identify part of LGBTQIA+

We asked a teacher: "What is it like to be gay in high school" .

"My old school had a club to be open"

Its still hard in some schools to be openly gay

Depends on the school you go to

- when we asked the questions to the class below us and the same class there were one or two people who thought lgbta+ was over rated or rubbish/guff.

- when we also asked the question alot/most of the class said "you are what you are" and It's fine to be ~~what~~ part of the lgbtq+ community".

- when we asked what sexual orientation they were one person said pansexual and Genderfluid and quite a few people said Ally as they had lgbta+ friends.

LGBT +

and

un-ashamed

Mental health problems such as depression, self-harm, alcohol and drug abuse and suicidal thoughts can affect anyone, but they're more common among people who are LGBTIQ+.

40% of people who are part of the LGBTQ+ community have considered suicide yearly.

86% of LGBTQ+ pupils regularly hear phrases such as 'that's so gay' or 'you're so gay' in school

53% of LGBTQ+ young people don't feel there is an adult at school who they can talk to about being gay.

An estimated 2.7% of the UK population aged 16 years and over identified as lesbian, gay or bisexual (LGB) in 2019, an increase from 2.2% in 2018.

Ideas

GAY DATING WEBSITE
- 1: we thought of this as sometimes its hard to find someone
- 2: we thought that doing this would be safe
- X: We Researched and found it wasn't age appropriate and slightly unsafe

ONLINE LGBTQ+ MEETING POINT
- 1: This was great for LGBTQ+ members to advocate and express their opinions and chat

ONLINE LGBTQ+ THERAPIST
- 1: At first this was a great idea for LGBTQ+ member with depression.
- X: But this would include quite heavy employment and further sycologyical research

Our Final Design
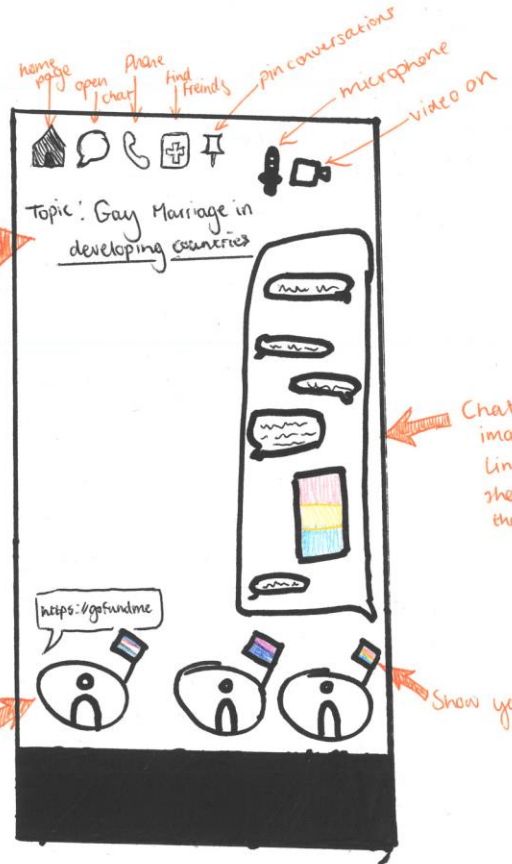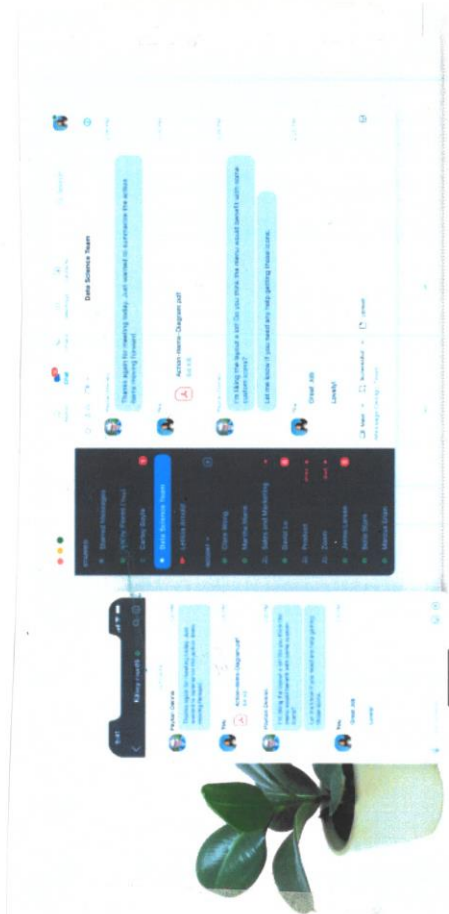
home page | open chat | Phone chat | find friends | Pin conversations | microphone | video on

Show the topic of the call

Topic: Gay Marriage in developing countries

Chats: send images and Links and show your thoughts.

https://gofundme

See whos in your chat

Show your sexuality

Friends

Group

Add friend in group

Our app is named ... FreeForLife

We Found Inspiration from...) ... ... and... discord

Zoom

GREEN STREETS

How might we restore nature to urban spaces to ensure that people and planet thrive together?

Collaborative brainstorming

who? Humans, elderly people, physically or mentally disabled people, children,
what? Animals, insects, the environment, bees,
why? To improve mental and physical health, biodiversity, social interactions, interactions between different age groups,
how? By educating the population, improving community spaces, insentivising planting in private gardens and land, rewilding urban spaces
where? Motorways, window sills, abandoned urban spaces, roadsides, private and public gardens
when? Dependant on seasons, weather, etc.

Benefits of greenspaces

Whilst conducting broad research, I realised that the lack of green spaces is at the core of the green streets problem, so I decided to start more specialised research into this.
£2.1 billion per year could be saved in health costs if everyone in England had good access to greenspaces; for every **£1** spent on maintaining parks, there is a benefit of **£34** in health costs saved.
Access to green spaces improves mental and physical health: children under 10 who have access to wildlife have **55%** less chance of developing physchiatric disorders later in life. (shown in the image to the right)
(Via the guardian.com & ncbi.nlm.nih.gov)

Air pollution

Air pollution contributes to **6%** of deaths every year. Air pollution can lead to many health complications, such as **lung cancer, asthma, cardiovascular disease**, and even **blood poisoning**.(Via Nigms.nih.gov)

Derelict spaces

Space is a premium in London, with very high rent costs around popular areas, so it's hard to believe that so much of it is left to decay. Derelict spaces occur when developers run out of money part way through a project , abandon the space to waiting for funding, or individuals can no longer keep up with rent and maintenance costs. A central London think tank (bbc.co.uk) discovered that the floor space of unused buildings amounted to about 1.8 million square metres. These spaces could be used far more efficiently as "meanwhile projects".

Broad research

Although I decided to focus on the green streets of London, I researched solutions all over the world.
Rewilding: many urban areas have been encouraging nature to take back their city; including Singapore, Nottingham, New York, and Melbourne. The process of rewilding reintroduces plant and animal species to places they'd been exterminated from, allowing for areas of woodland oasis within heavily polluted areas.
**Nottingham wildlife trust:** This organisation aims to take over a local abandoned shopping complex and turn it into a woodland for local wildlife.
La Marjal floodable park: can store up to 45000 cubic metres of water to reduce the impact of flooding, and recycle water for drinking and irrigation, as well as providing wetland habitats for animals.

Mental health

As mentioned, access to green spaces significantly reduces mental health difficulties. The study shown below shows how dramatic the effect can be.
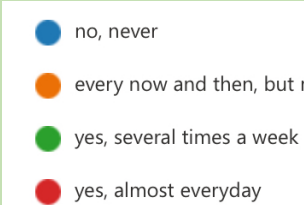Several trials have revealed the beneficial effects on mental health by observing nature and viewing images of natural scenes. In a Japanese study, viewing plants reduced stress, fear, anger, and sadness, as well as lowering blood pressure, heart rate, and muscle tension.
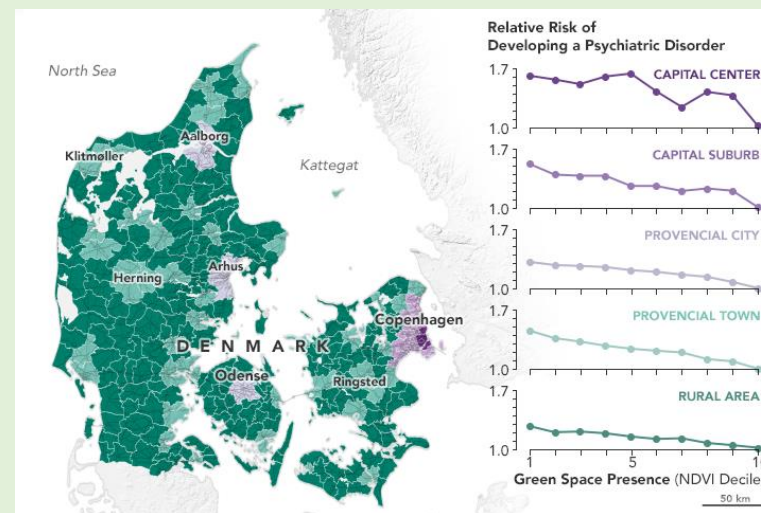
Questionnaire

I conducted a survey to gather public opinion on this topic, to make sure my product suits the needs of as many people as possible. In order to gather the most accurate information, I posted QR codes all over London and student forums to reach many different demographics.

Do you regularly walk past vacant lots?

Does spending time around nature improve your mood?

- no, never
- every now and then, but r
- yes, several times a week
- yes, almost everyday

- yes
- Somewhat
- not at all

What are meanwhile projects?

After realising how many derelict and unused buildings there are around London, I discovered a scheme called "meanwhile projects". This means using these spaces for temporary office space, charities, community parks, and art instillations. It's an efficient solution, maximising space and enriching the community. An example is this garden in white chapel set up by mental health charity "Core Landscapes", set up in a vacant lot. All plants, ponds, and everything else are in moveable containers so that the garden can travel to a new space when needed. The garden is open to the entire community, and many patients are referred by the NHS. I met with the manger of core landscapes, Nemone Mercer, to get more information.

FINDINGS

Conducting and analysing my research to focus on a specific part of the problem.

Mental health benefits

Biodiversity

Everything I've learnt from my research and interview with Nemone has emphasised how changeable these temporary spaces are, and how adaptable you must be. I aim to reflect this in my designs.

What is the problem I am trying to solve?
I'm trying to increase the amount of green space in busy cities such as London
Stakeholders:
Pedestrians, local wildlife, local councils, commuters.
My design brief
Design a structure that encourages natural growth and provides habitat for local insects, in the process improving mental health. Materials used shouldn't negatively impact the environment or people.
What is the impact I'm trying to have?
To improve the biodiversity and mood around London, while using space efficiently.
My specification
My product must increase the amount of nature around London, in order to improve the mood and health of passers-by and locals. It should make use of unused or abandoned areas, and use the principle of collapsibles to maximise space.

Key findings

Through my questionnaire and expert interview, as well as secondary research, I've explored different aspects of the title. I've discovered that London doesn't have nearly enough green space, although there are many abandoned areas that could be utilised. In addition, although **74% of participants** in my survey considered the extinction of bees as "**catastrophic**", not nearly enough is being done, such as the core landscapes project, to mitigate the damage.
Therefore, I will focus on providing habitats for insects in unused areas.

Bee protection

As seen to the right, over 74% of answers in my survey agreed that bee extinction would be catastrophic, and therefore I have decided to add an element of bee protection to my project. A recent law in Brighton dictates that all buildings above a 5 metres must include "Bee Bricks", nesting spaces for solitary bees that increase their chance of survival (seen below). There are about 270 species of bee in Britain, just under 250 of which are solitary bees. Changes in land use make it difficult for them to safely nest, which Bee Bricks hope to change. As Melissa Petruzzello writes on Brittanica.org, "Without bees, the availability and diversity of fresh produce would decline substantially, and human nutrition would likely suffer. Crops that would not be cost-effective to hand- or robot-pollinate would likely be lost". Humans are looking at malnutrition and a huge drop in biodiversity if bees became extinct.

- no impact
- an inconvienience
- minor impact
- a large but manageable probl...
- catastrophic

Interveiw with Nemone Mercer.

I met with the manager of the Core Landscapes charity, Nemone Mercer, to try and understand what is involved in running this kind of operation. Nemone outlines the main challenges as **"the speed at which permission can be gained. Once you've identified a site, you need to find the legal owner, and then negotiate with the local planning authority, and get funding for the relocation."**
Overall, she puts emphasis on the biodiversity of the project, that **"The whole remit of the project is to increase biodiversity and mitigate climate change."**

Insights from interview

Through this interview, I have learned much about what is currently being done towards the challenge of green streets, and the process through which this works. Firstly, the application process through which spaces can be acquired is complicated and lengthy, with a lot of red tape. Therefore, when designing my product I will assume that permission has been gained to avoid all of this. In addition, the mental health benefit that communities and individuals gain from nature.

Stakeholders

The problem I'm designing for impacts many different demographics, such as pedestrians, commuters, local residents, gardeners, animals, insects, and many more. Due to the way the project and my time management progressed, I was unable to find a specific stakeholder and instead based by designs and subsequent iterations on my research and peer/teacher advice. If given more time, I would find a local gardener to be my stake holder and give opinions on my designs.
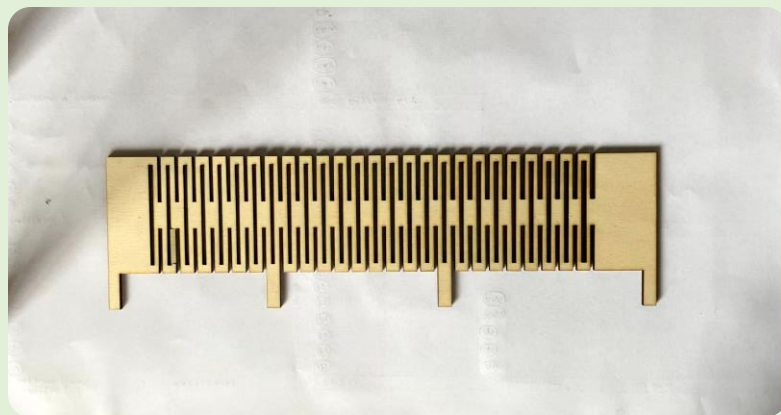
1. Living hinge

This idea uses the living hinge principle to create a more flexible version of the first.
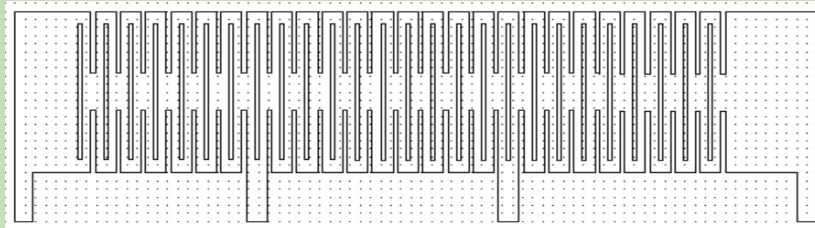
This design consists mostly just of the living hinge, although I have also added posts at the bottom to be pushed into soil and hold the frame work in place.

Using the program 2D Design I drew up the template seen above and printed it onto 3mm plywood with the laser cutter.

The flexibility of this design makes it adaptable to different spaces, as it's impossible to tell what state a meanwhile space will be in.

Evaluation

What are the faults? Which is most practical?

The living hinge is simple to produce and manufacture, which is important for creating a viable product. It uses renewable material and multiple designs could tesselate onto a single sheet of wood to minimise waste. However, although this design is simple and attractive, it doesn't provide any shelter for insects which was a part of my specification. Therefore it isn't the best suited for my brief.
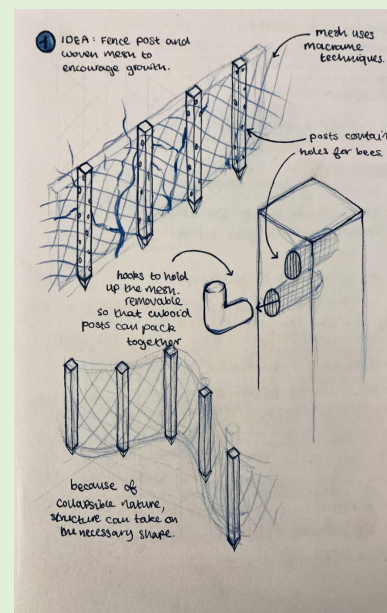
2. Fence post

This idea consists of dismantle-able fence posts and a mesh.

Here is my preliminary design.
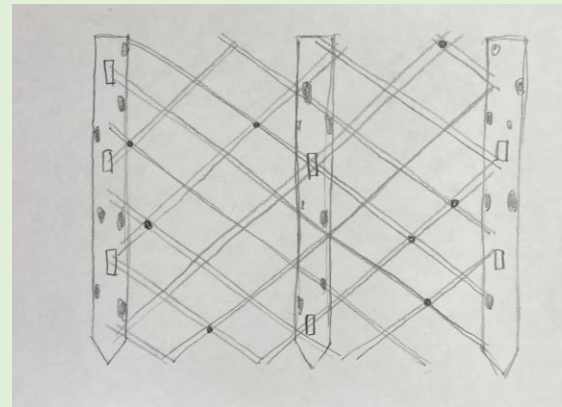
This design consists of many cuboid fence posts made of wood, which are driven into the ground in the desired area. Then, a net is strung up between these posts to provide a frame for plants to climb.

Here are my more detailed sketches for a design.
It fulfils the insect homing criteria, and is suitably adaptable to different environments.

As the design is made mostly from wood, it is easy to manufacture and treat to suit different environments.

As already stated, the fence post design encourages natural growth and provides habitat for insects. In addition, design is collapsible and easy to transport and adapt which adds to its' convenience. Therefore, this design is the best suited and most practical design.

3. Bricks

This idea consists of many interlocking bricks.

The interlocking system of bricks enables them to cover the required surface, but also to be stacked and moved easily. They can adapt slightly to different spaces, but are limited.
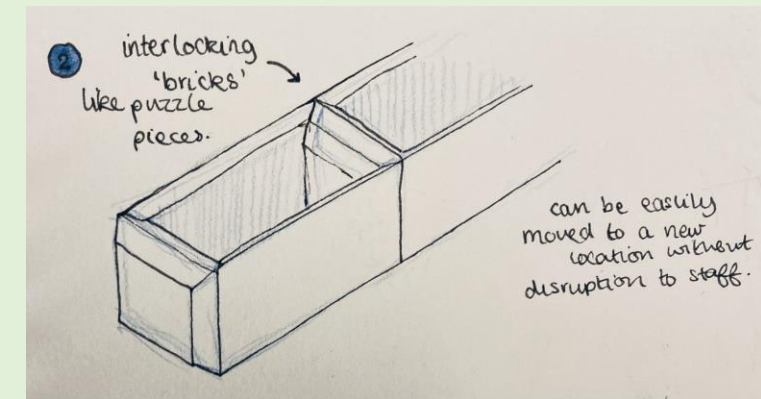
The design means that plants can be moved inside the bricks when the location is changed, which gives it a longer life span for growth.


At the bottom of the brick, I'll add a platform a few inches tall built with the honeycomb structure seen above. This will this provide a habitat for bees that mimics their natural one.

Although the design could support most of the specified features, it doesn't encourage natural growth as much as act like a plant pot, separate to the rest of the environment. In addition, although the honeycomb structure is ideal shelter for bees, it would be difficult to produce and would either take a lot of effort and waste to make out of wood, or use plastic injection moulding which doesn't use renewable resources.

TESTING & DEVELOPING:

What sets this product apart?

Naturally there are many other plant trainers available on the market, but the reason I think this design is necessary is due to its' insect homing quality and adaptability. Most products currently on the market are designed for domestic use, meaning they intended for a well kept garden. However, artificially colours may scare off pollinators, which is certainly counter productive, and not every potential garden is as well kept as a front lawn. This product adapts to and blends in with its environment, to simulate natural growth as much as possible. In addition, it is able to adapt to different circumstances and easily be moved from location to location.
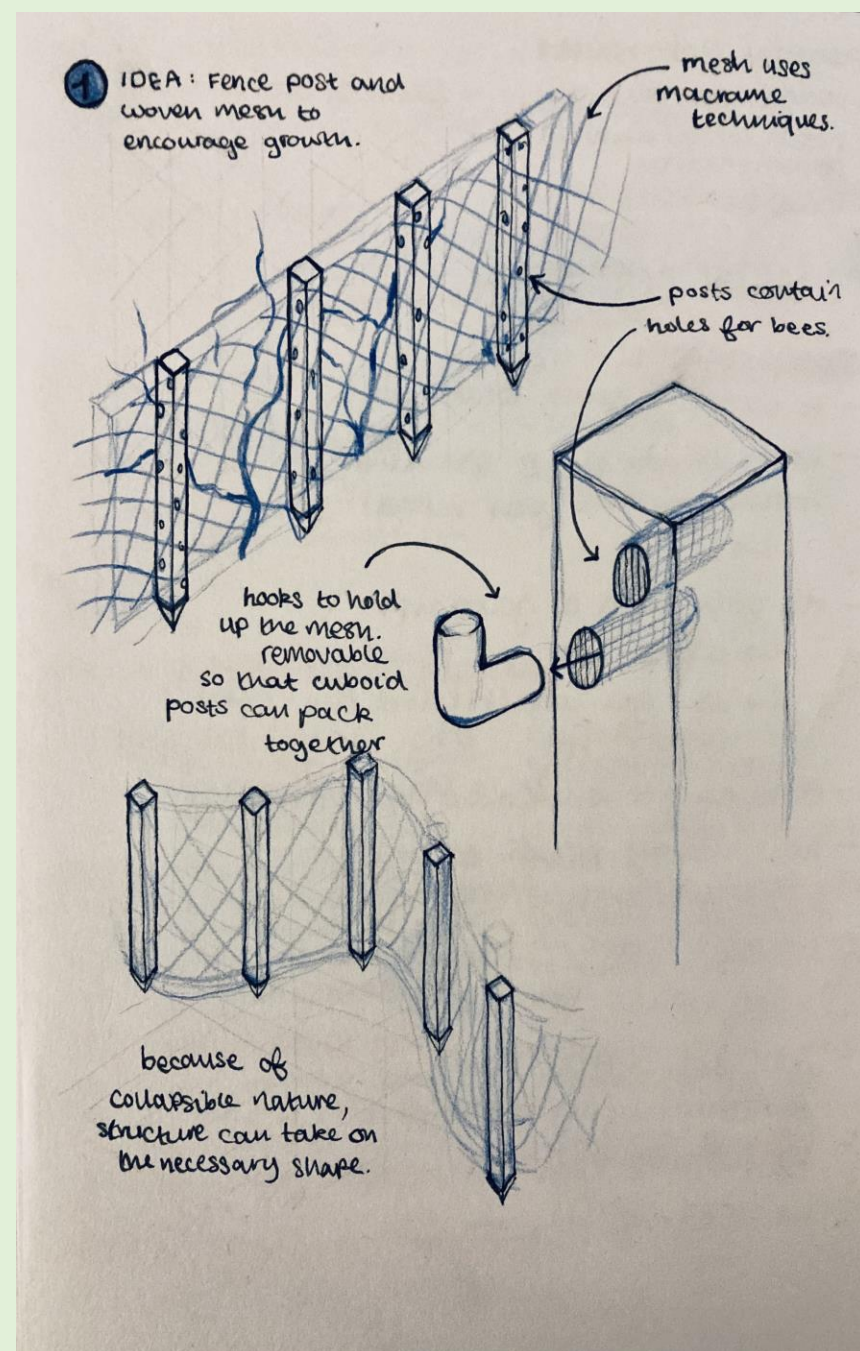
In this prototype I have drilled holes in to mimic those in "Bee Bricks" and allow solitary bees a safe place to rest.

The cuboid shape of the posts allows them to tessellate in order to pack up neatly when moving.

In addition, the holes allow for right angled hooks can also be inserted to hold up the net.

I stained the wood dark to camouflage it and sealed with wax to protect from the elements.

The removable nature of these pegs not only allows the posts to pack neatly together, but also lends an element of customisability to the design, as pegs can be removed or added on all different sides in order to navigate turns and different obstacles in the landscape.

.

Materials, cost, and sustainability

The design should be relatively low cost to produce, and could be made from manufactured board which is more sustainable and easy to access. MDF, or medium density fibre board, is made from wood chips, shavings, and sawdust that would likely otherwise be discarded, making it an environmentally friendly.

Although the netting shown in the photo is repurposed fruit packaging, when fully realised I intend to make it out of twine or similar through the process of macrame. This means the product is almost entirely biodegradable, in the event that it is forgotten about (although it is intended to be reused).
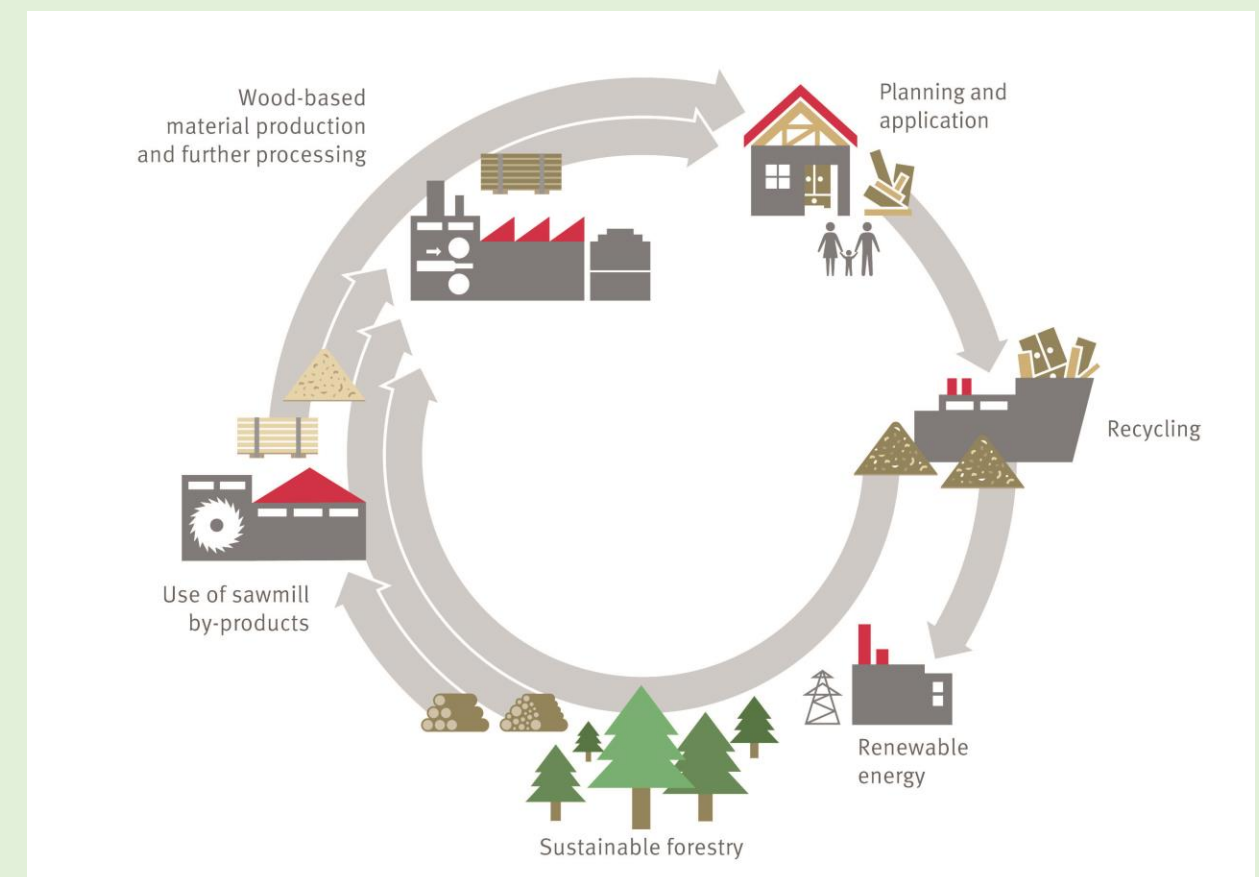
IMPACT

What sets this product apart?

Naturally there are many other plant trailers available on the market, but the reason I think this design is necessary is due to its' insect homing quality and adaptability. Most products currently on the market are designed for domestic use, meaning they intended for a well kept garden. However, artificially colours may scare off pollinators, which is certainly counter productive, and not every potential garden is as well kept as a front lawn. This product adapts to and blends in with its environment, to simulate natural growth as much as possible. In addition, it is able to adapt to different circumstances and easily be moved from location to location.

KEY THOUGHTS & FEATURES

• Self sufficient structure that biodegrades, contains nutrients and encourages wildlife growth
• Rewilding aim, encourages natural biodiversity.
• Inspiration; burial pods
• Includes collapsible in implementation process.
• banned bee-killing neonicotinoid pesticide

As previously stated, the point of this product was to encourage natural growth and provide shelter for insects. I believe this brief has been met. Not only does the product benefit nature, but by increasing the greenery around London, the populations health and mood will be improved. Although it seems such a small change wouldn't have much impact, there have been many studies

Wood-based material production and further processing — Planning and application — Recycling — Renewable energy — Sustainable forestry — Use of sawmill by-products

Sustainability should be at the forefront of all design thinking. This product takes this into consideration.

FINAL IDEA: *Green Homes*

KEY FEATURES:

•Self-sufficient structure that biodegrades, contains nutrients and encourages wildlife growth
•Rewilding aim, encourages natural biodiversity
•Includes collapsible in implementation process.

Lily Macaskill

Food for thought:
Food waste in family households

I discovered a massive problem of **food waste in households**, I aim to find a design solution/product that will enable or educate households (families with children) on how to be more conscious of the food that they have and are wasting, as well to prevent this now and in the future.

The UK throws away **9.52 million tonnes of food per year**. This emits 25 million tonnes of CO2 – more than Kenya's total annual emissions. One-third of food produced globally goes to waste

Households are the biggest contributor to food waste in the UK, they make up **70% of the total food waste**. Households throw away, on average, 1.96kg of food per day, in the Uk.

I thought about ways to encourage households and realized one of the key aspects of many households is family, so I decided to focus on how to encourage families to reduce their amount of food waste. I started to research different existing children's and family-based products.

Primary Research of Existing Products

The very hungry caterpillar- The book is well suited to the user; you can tell by the global success of the book, it suits its target audience through the aesthetics that are very clear, simplistic & colourful. The book efficiently integrates learning and a moral through a fun story for children and functions very effectively, while being good value (£5) for the user as it can be re-read. The book creates a source of entertainment as well as and educational experience.

M&S my little garden-
This product is very small and efficient with minimal waste packaging, the product is compact meaning it will not take up much space (It is only 6cm in height & 4cm wide); an advantage to people the it live in apartments without gardens. The drawings on the packaging bring together the aesthetic and makes the product seem fun and would engage children and families.
The product contains seed patches, compact soil and the biodegradable pot, I believe that this product is perfect for encouraging people to grow their own foods right in their homes and decrease their food waste by learning to grow what they need.

Educating children and the effects of parent/carers :

Children are much more impressionable and easily influenced, they can **easily create new routine**s and new ways of thinking, whereas **adults are more set in their ways** as they have already been in the same behavioral pattern of living for a longer amount of time.

By encouraging younger kids and getting them well educated and enthusiastic about their amount of waste as well as the impact it can have on the planet means they create good habits that they can continue when they are older. However, there will also be an impact on the parent/carers as the child's willingness to do something would give the parents, not only an incentive to it themselves; a personal encouragement and enforcement from the enthusiasm of their child.

How to decrease family food waste.

Pop-up Garden-
This product at a first glance is very bright and there is an overwhelming amount of colour on the cover of the book- this is good as it is very enticing to children and would engage them. This product is unique as the design of the interior pages would set it apart from other books.
To make the pop-up book work the designers have used paper mechanisms so that the pages can open and close easily; this is produced through a use of paper engineering. The production process is difficult and as more resources are used per book it is usually more expensive, but this product is priced at £9.99.

Unfortunately, as this pop-up book contains a vast amount of glue in most places they can't be recycled. (Although recyclable adhesives are available) however since these books can be re-used and re-bought or donated (ect), therefore it could still be considered sustainable.

I am going to take inspiration from these findings and existing products to tackle the problem of food waste in the household by creating a pop-up book with an added activity (seeds for growing own produce) to educate children and improve households individually and their attitude towards food waste.

Due the problem of food waste in households I have created a design solution that would <u>aim to educate children on the importance of food sustainability, doing this using a pop-up book</u> that shows the progression of a growing fruit or vegetable.

I have considered using **seeded pape**r so that when you are done with the book it can become the food and produce and reduce waste of paper, it's a new way to recycle the book at the end of its lifetime.
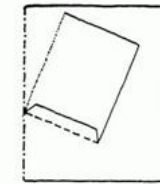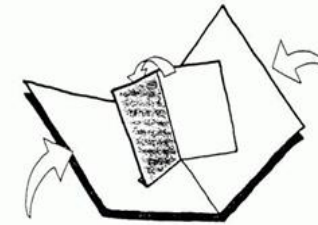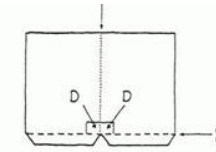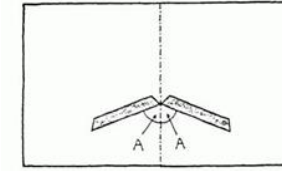
For the pop-up mechanism, I will design nets on 2D design so that it can be precisely laser cut in card, I will also use this for any of the additional pieces of card needed for the product.

I want to try out different shapes of book to see what could be more engaging and on theme for children while ensuring that it still meets the needs of the products function. For example, the leaf shape; it sticks to the theme of the product and would make it more unique when compared to other pop-up books.

The book would have pop-up features and would aim to educate younger kids gently fueling them with ideas on how to be more sustainable form a young age and why it's so important.

This would have the idea of growing your own produce and would have a list of instructions and seedling packets at the back of the book along with a compostable set shape pot made of recycled card at the back for the vegetables to be grown in. It also creates a fun thing for parents to take part in with their young kids at home.
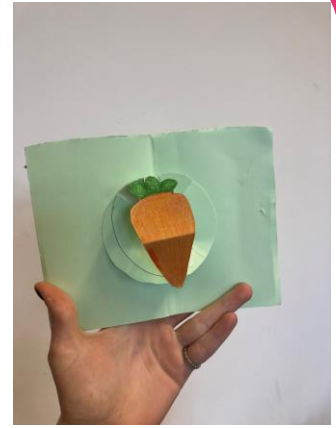
Models

I spent time exploring different pop-up mechanisms that I could use to incorporate the process of produce growth; I didn't include the story-telling in the models as it would've been handwritten -not typed- however, the pop-up should be ablee to visually tell the story to ensure younger kids can enjoy it.


The pot will be formed by the user using a net that is in the back of the book that can be used to plant the seeds in. This would be made of a corrugated/recycled card.

First model

My first design was more simplistic, it was smaller and was a standard rectangular book.
I compared this to my previous designs and decided to try a new shape for the book in my next model to create a more aesthetic outer appearance.
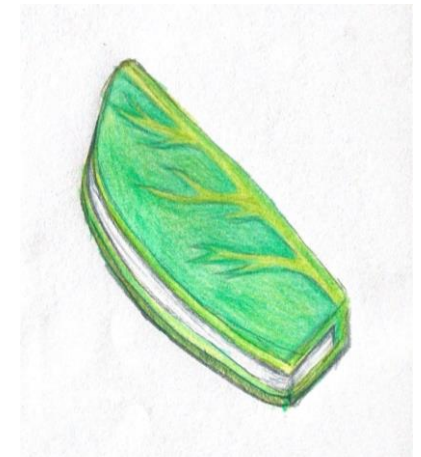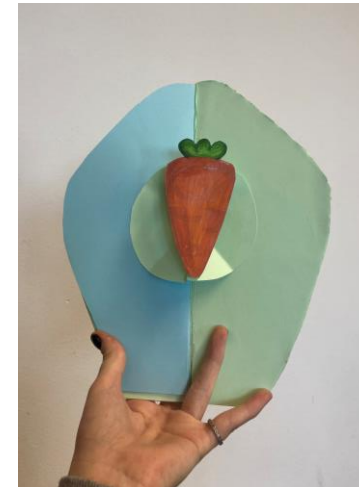
The book when closed is half a leaf, creating a whole leaf when open.

Client Feedback
From a mother with a young daughter.

Would this be a product you would use with your child?
"yes, I think it easily encourages food sustainability and would engage my daughter and has a cute concept"

What colours or themes (for the book) would make you more likely to purchase it?
"I would prefer seasonal colours as they would go nicely with the theme of watching the plant grow"

How much would you pay for this product?
"Ideally, no more than £20"

*What size would you want the book to be?*
"Around an a4 size."

What would put you off purchasing the Product?
"I could be put off by the time and commitment and space that may have to go into growing and using the seeds after, but if it's easy to use and has an instruction booklet with tips to help grow the fruit or vegetables."

Is there anything you would change or add to the product?
"To make the book more interesting to my daughter, I think you could include more interactive or even textured parts within the book, making each page more unique and engaging to kids."

Client feedback made me expand my ideas about my product and different ways I could use it to encourage clients and family members to purchase my product. I could make my product collectable by doing different variations of book, for example release 4 books- one for each season- containing different seeds within each book to grow different fruit or vegetables.
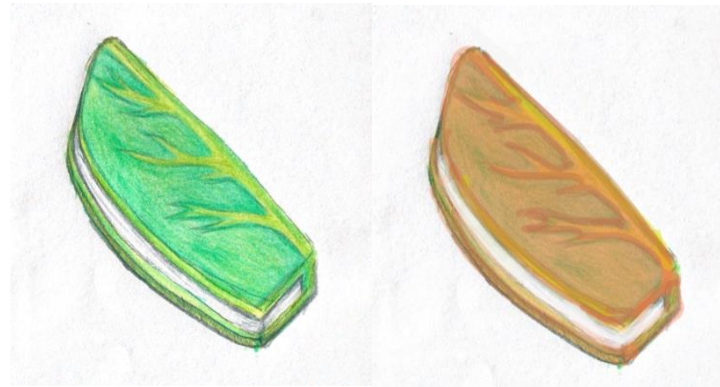
Catering to the client's Needs:

Design features:

Cost
- Needs to be affordable but appreciate costs of manufacturing

Aesthetics
- Bright colours to keep child interested
- Simple layout so it's easy to follow

Materials
- Needs sturdy, thicker paper/card that is easy to fold
- Solid white board
- Seeded paper
- Recycled card
- bioglue

Sustainability
- Recyclable materials needed
- Glue used needs to be bio glue, this ensure the whole product can be recycled

Anthropometrics
- Needs to be able to held by a child
- Needs to have large writing so its easier to read
- Simple sentences for children's comprehension
- Relatively light

Pop-up Book Final Idea

Materials

I would use **solid white board** for the cover as it is strong, high quality and good for printing although, I could also use this card for the inner pages as they need to be sturdy for the pop-up book to work however, I am going to instead use a **seeded card** paper (like seeded card used in birthday card production) to ensure that once the client has no more use for the book it would be mostly decomposable and reusable, giving the product a new lifespan by becoming produce.

I would use **Jelly glue (protein glue)** as it is 100% non-toxic, recyclable, and decomposable, making it one of the most environmentally-friendly adhesives available to use in manufacturing.

For the miniature plant pot, I would make it out of a **recycled cardboard and paper combination** so that it is decomposable and recyclable like the rest of the book.
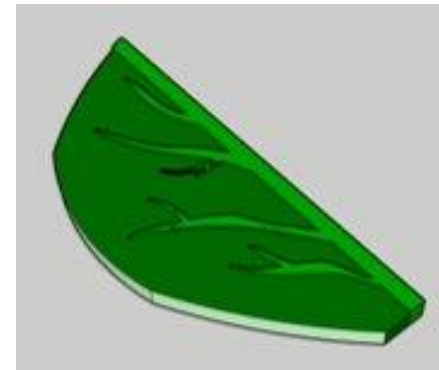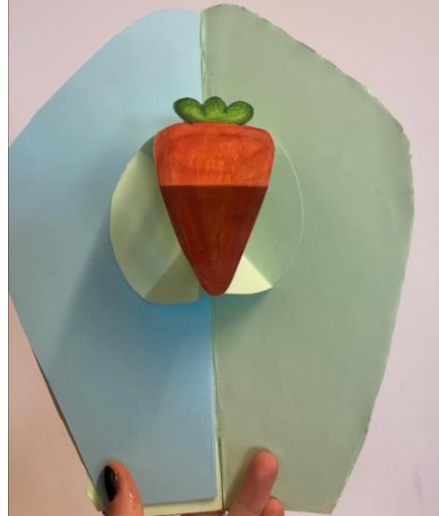
My final design solution is an interactive pop-up book, that will contain a story that encourages, excites and educates kids on the importance of not wasting food.

It will come with a compressed soil tablet, a buildable net of a decomposable pot, instructions on how to grow different fruits and vegetables, a vegetable seedling package and seeds embedded in the pages.

Not only will this product be 100% recyclable it is multipurposed so that when the client is finished with the book, it will not be thrown away and wasted; it will grow into food they can use, this will create a new experience for many families.

This product will tackle the problem in the long-term and short-term, this is as younger generations are easily impressionable and after getting into a routine at a young age will most likely continue these routines and habits later in life.

Here to help

If you have any questions, you can get in touch in the following ways:

1 With the RSA Pupil Design Awards team: pupildesignawards@rsa.org.uk

2 Once you have been assigned a mentor and they are preparing to visit the school, feel free to contact them with any specific issues regarding the design process that you would like them to address.

We look forward to seeing your pupils' entries!

The RSA Pupil Design Awards Team

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I feel that the skills I have learnt and the problems that we overcame have really benefited me in becoming more confident within myself.

Finalist, Pupil Design Awards

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RSA

Pupil Design Awards

The Pupil Design Awards is a competition
run by the RSA, a registered charity in England,
Wales (212424) and Scotland (SC037784)© 2024

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