



# Sustainable learning through Design Thinking

# Acknowledgement of Country

UQSchoolsNet through the University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.

*Image: Digital reproduction of A guidance through time by Casey Coolwell and Kyra Mancktelow*



# Teaching Design Thinking

Dr Marie Bodén

Mrs Lilly Hope Borchardt

*“Design is directed toward human beings. To design is to solve human problems by identifying them and executing the best solution.”*

Ivan Chermayeff

[www.interaction-design.org](http://www.interaction-design.org)



# Design Thinking –

DECO1100 (Undergraduate students)

DECO7110 (Postgraduate students)

~300 students

Varying backgrounds (*IT, CS, Business, Design, Interaction Design, Engineering etc*)



## WHY?

- Wicked problems
- problem solving
- Group work (better solutions)
- Communication
- Reflective and critical thinking

# Activity 1:

## You need:

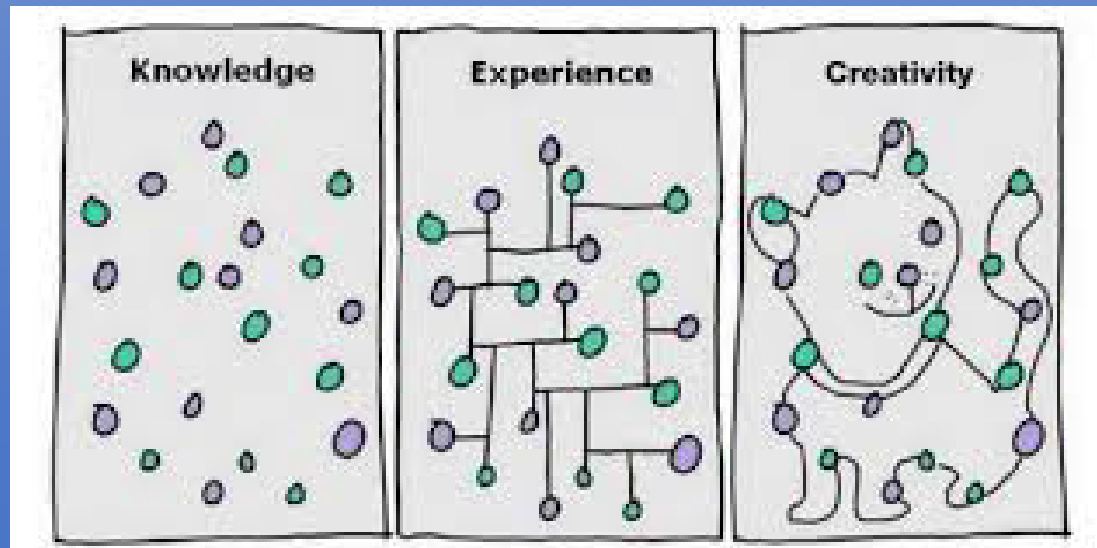
1 piece of paper

1 felt pen

You have 1 minute to finish the task.

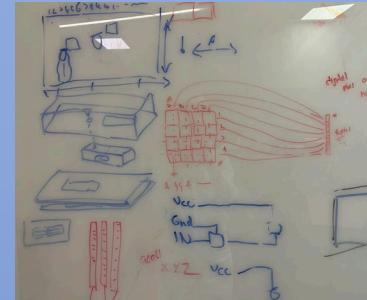
## Draw a duck!

When finished bring your drawing to the presenter and wait for new instructions

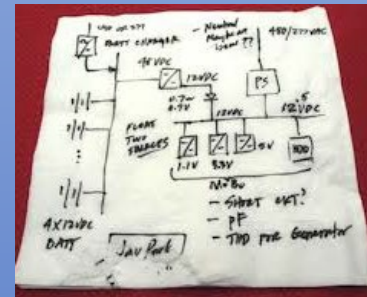


# Sketching

- Helps with communication
- Sketches helps groups to form a united understanding of concepts
- Doesn't need to be advanced
- Thumbnails – small sketches of details or ideas
- Can be done with different materials



On a glass surface



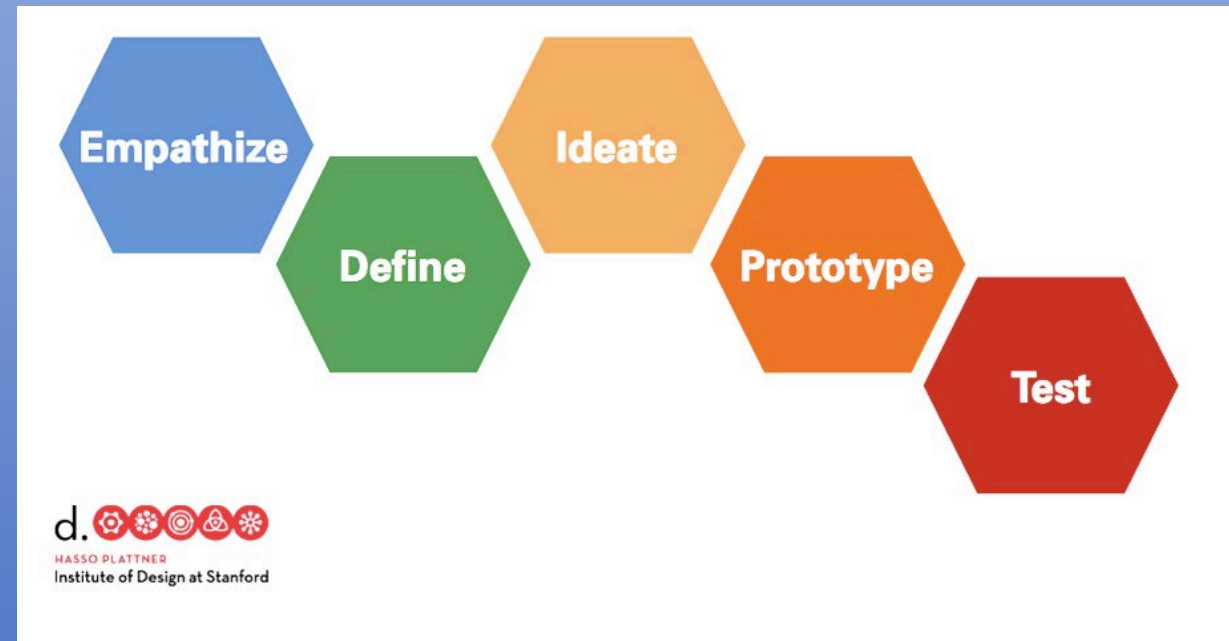
Napkin sketches

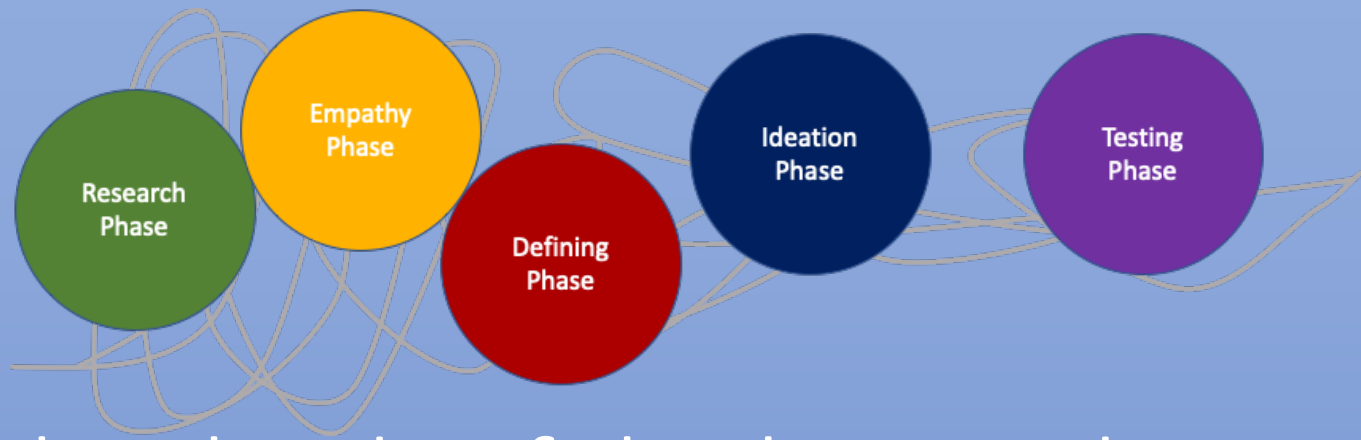


Play Doh sketching

# Design Thinking

- A process for solving problems
- Designing for human users
- A tool kit consisting of methods working through design solutions
- Can be iterated until satisfying solution has been found





# Q: What kinds of thinking is design thinking?

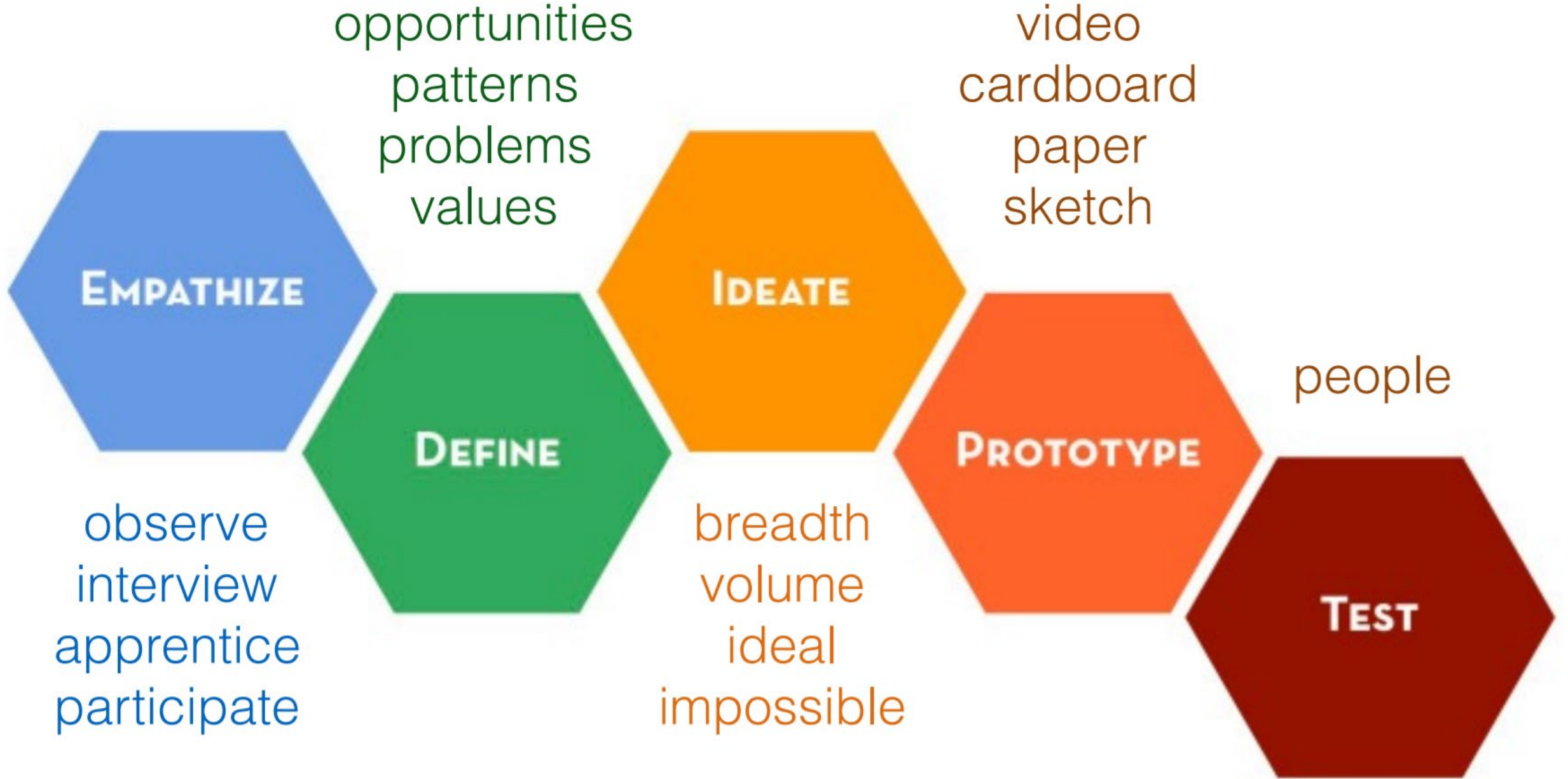
Design      Medicine      Engineering

Education      Business      Marketing      **Many more...**

Tim Brown – think big!

[https://www.ted.com/talks/tim\\_brown\\_designers\\_think\\_big?language=en](https://www.ted.com/talks/tim_brown_designers_think_big?language=en)





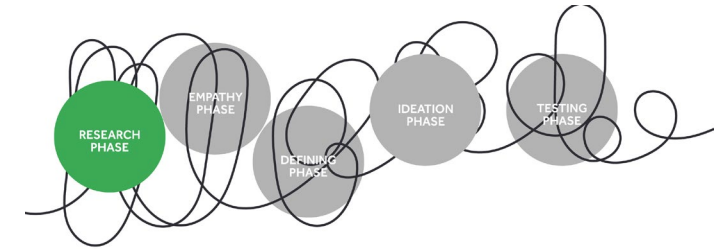
# Using Design Thinking

**Problem:** Garbage Mountain



**Your task:** Design a positive future solution for garbage and recycling systems.

# Step 1: Research



## Context

Based on your research, choose the context you want to design.

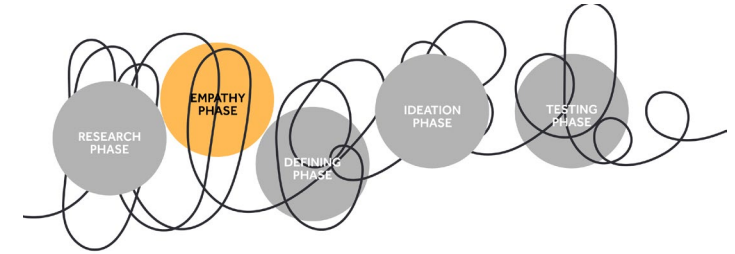
- **What stories can you share about garbage?**

Go around the team and let each group member talk about an experience of throwing away garbage or recycling.

Write down what **problems** there are with garbage and recycling.

Also take notes on what people seem to **like**.

# Step 1: Empathise

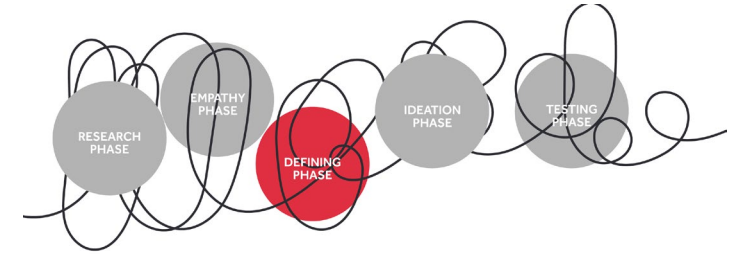


- **Users**

Think about who uses garbage and recycling systems?  
Where and when do they need access to these systems?

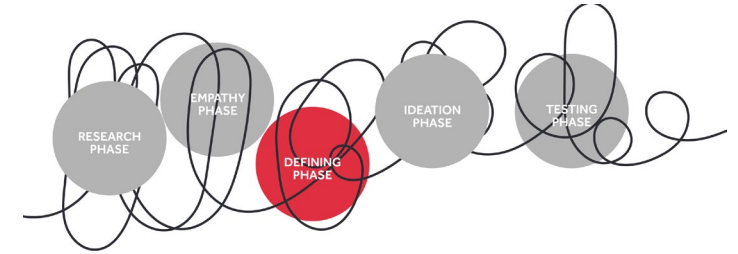
- *Keep taking notes of what you come with, and make sure everyone gets a turn to speak!*

# Step 2: Define



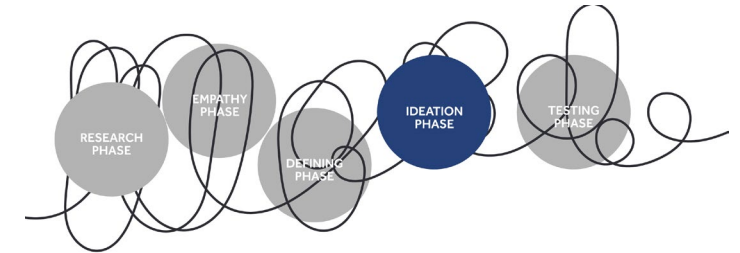
- **Make a decision...**
- Now that you have done some research, think about what area you would like to pursue...
- “Our garbage and recycling system will be located in \_\_\_\_\_, and we will focus on \_\_\_\_\_.”

# Step 2: Define



- **Define to the class!**
- Each group present their context and focus to the rest of the class.

# Step 3: Ideate



- **Rules:**

Quantity over Quality

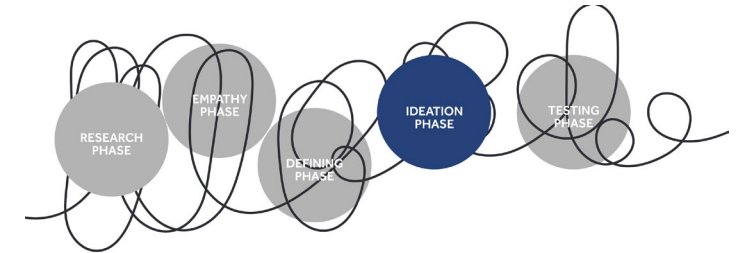
No Judgement

Build on Other Ideas

Go for the weird ideas!

***Everyone Participates***

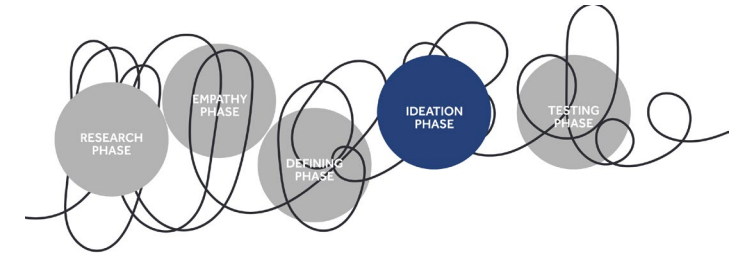
## Step 3: Ideate cont...



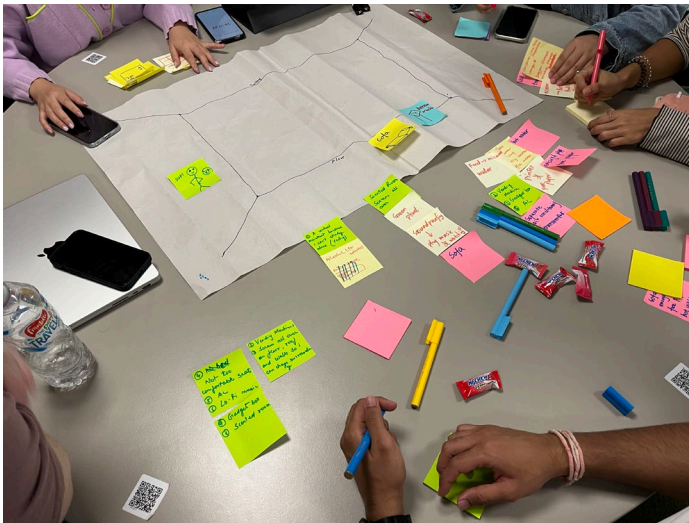
- Think of the **worst** idea you can think of for garbage and recycling handling.
- **Remember to let everyone in the team join in on ideas.**



# Step 3: Ideate cont...



- **Present your ideas!**
- *Who came up with the worst idea?*



## Step 3: **Ideate** cont...

### ~~Worst idea~~ – **Best idea!**

- Choose one or two of your **worst** ideas.
- Why are these terrible ideas?  
Discuss.
- Work together on a butcher's paper and come up new designs that would work, don't forget to document everything!

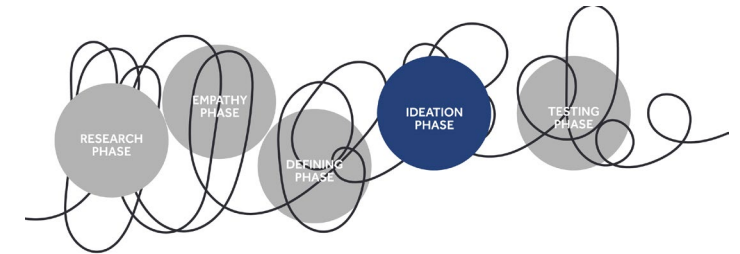
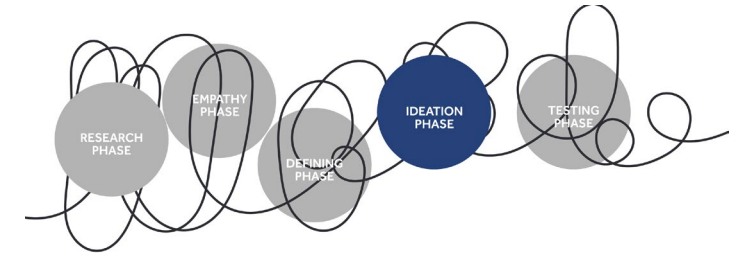


Photo by [Mark König](#) on [Unsplash](#)

## Step 3: **Ideate** cont...



### **B.A.C.E. (Build, Associate, Clarify, Endorse)**

Every sentence must begin with one of these 4 phrases:

**Build** - *it would be better if...*

**Associate** - *it makes me think of...*

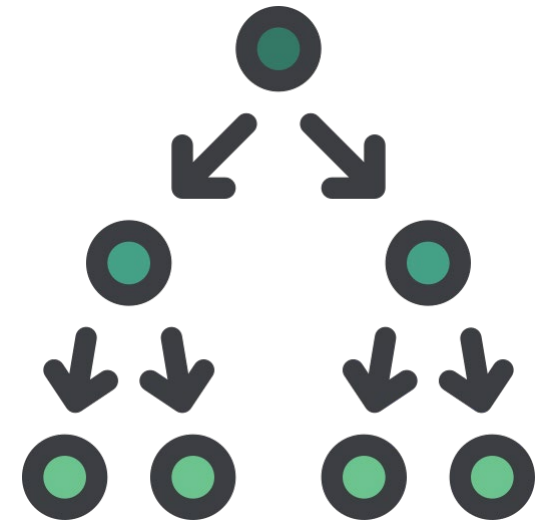
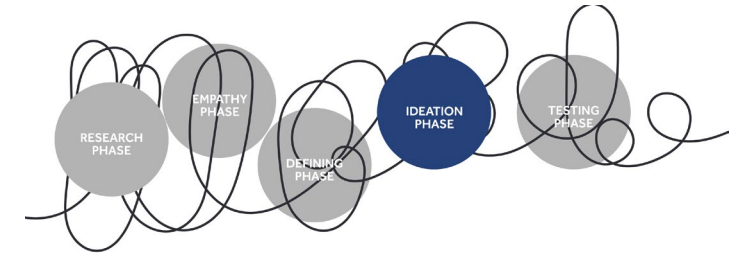
**Clarify** - *do you mean...*

**Endorse** - *a great thing about this idea is...*

## Step 3: Ideate cont...

### BACE

1. Pick someone's idea (however bad).
2. Assign roles and take notes:
  - **Team Member 1:** BUILD - *it would be better if...*
  - **Team Member 2:** ASSOCIATE - *It makes me think of...*
  - **Team Member 3:** CLARIFY - *Do you mean...*
  - **Team Member 4:** ENDORSE - *A great thing about this idea is...*
3. At every turn, **create a thumbnail** each for *build, associate, clarify & endorse*.



Icon by [KP Arts](#) on Flaticon

# Generative AI

- What is it?
- Algorithms, trained on large data sets, that can create content in a variety of digital mediums based on minimal user input. Most based on large language models
- What are the different types of AI-generated content?  
Writing, images, video, music, code.

# Generative AI - considerations

- Academic Code of Conduct
- Sustainability considerations
  - Electricity & water use



chatGPT vs Google search query  
15x more energy



chatGPT 0.5L every 5-50 prompts

- Benefits (environment/social/economic)

Mint Lounge article: <https://bit.ly/3STXZpy> Original  
Reddit discussion <https://bit.ly/42Xv0pF>

de Vries, A. (2023). The growing energy footprint of artificial intelligence. *Joule*, 7(10), 2191–2194.  
<https://doi.org/10.1016/j.joule.2023.09.004>

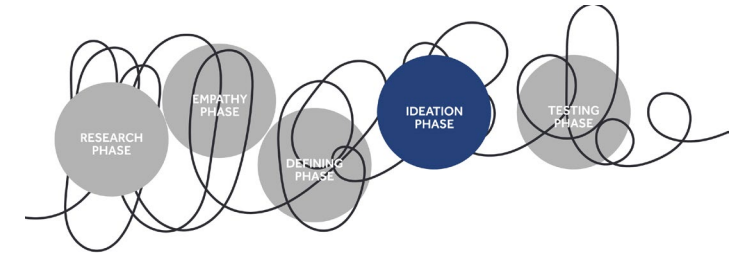
## Step 3: **Ideate** cont...

# AI Ideation Methods

## Step 1: AI-Ideation

Ask a generative AI to come up with **5 ideas** for your brief (and write them down).

Use any AI system you like. If you're familiar with a specific one, feel free to use that.



AI options:

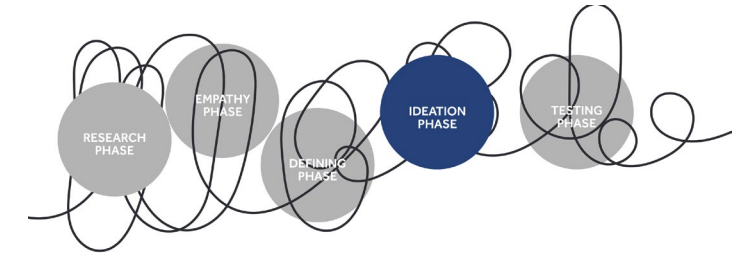
[www.meta.ai](http://www.meta.ai) (no sign-up required)

[chatgpt.com](http://chatgpt.com) (no sign-up required)

[gemini.google.com](http://gemini.google.com) (need google account)

## Step 3: Ideate cont...

# AI Ideation Methods



## Step 2: Expand

Pick one of those ideas & use another method to expand upon that idea.

Think about statement you created at the start:

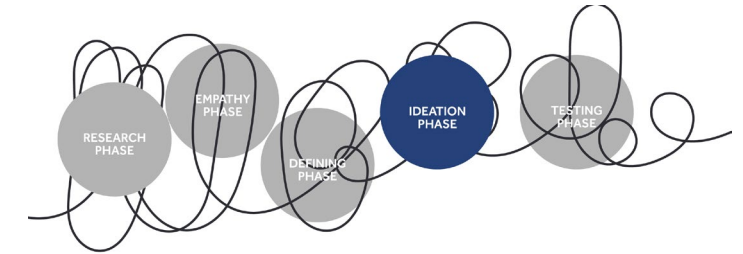
*“Our garbage and recycling system will be located in \_\_\_\_\_,  
and we will focus on \_\_\_\_\_.”*

Does the AI-generated ideas answer or fit this statement? Is it appropriate for your users, your location? How could you change an idea to fit?



## Step 3: Ideate cont...

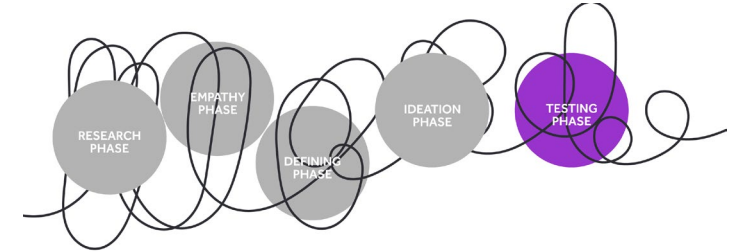
# AI Ideation Methods



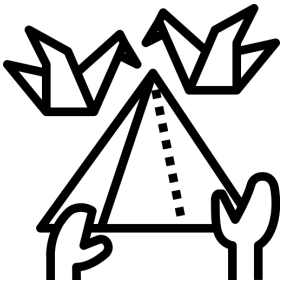
## Step 3: AI-Ideation (again)

Now ask an AI to generative 5 ideas **based** on the idea you picked in step 2 (Expand). What ideas did it come up with? How are they similar or different to the ideas you came up with?

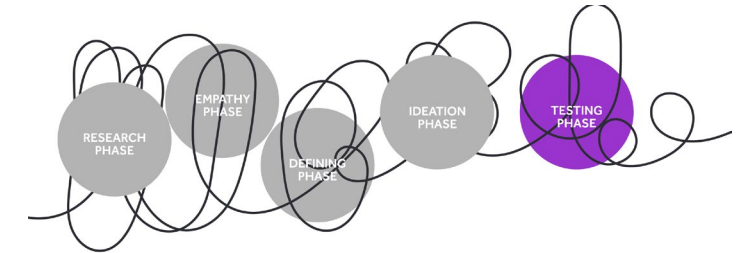
# Step 4: Prototype



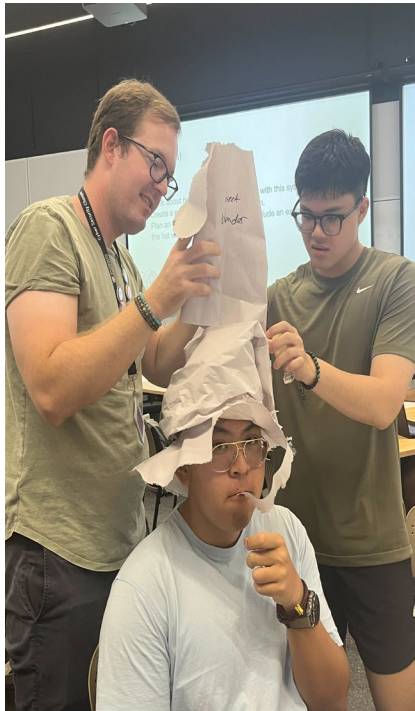
- Choose your **Top 3 Ideas** (choose 2 good ideas and 1 crazy idea)
  - Use your **top 3 ideas** and turn them into a design.



## Step 4: Prototype cont...



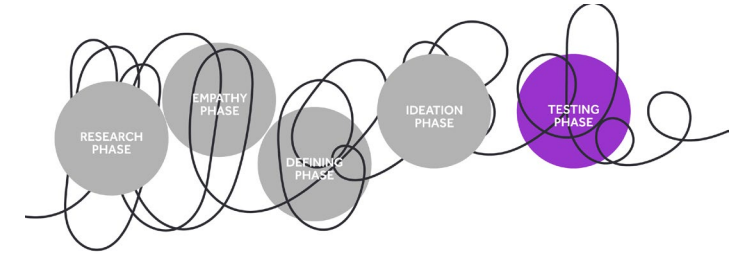
Make a sketch or build a paper prototype of how the system will work



Paper and cardboard prototypes

Body Storming

# Step 4: Feedback



**Presentation time!** 😄

All groups will present their designs.

Everyone can ask questions and give feedback!

*“Don’t seek praise. Seek criticism.”*

Paul Arden

[www.interaction-design.org](http://www.interaction-design.org)

# Peer feedback

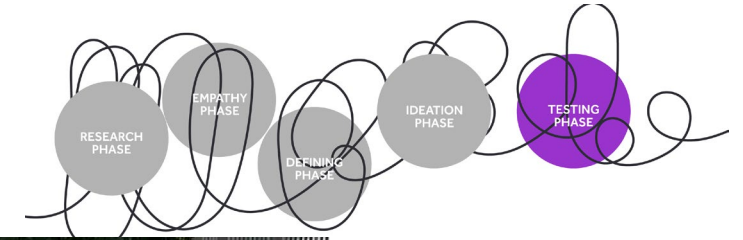
- Can be used through out the process
- Helps students include different perspectives and improve their ideas
- Active engagement in other ideas
- Creates a supportive community amongst students
- Improves critical thinking



# Peer feedback & Co-Design Workshops



# Step 5: User testing

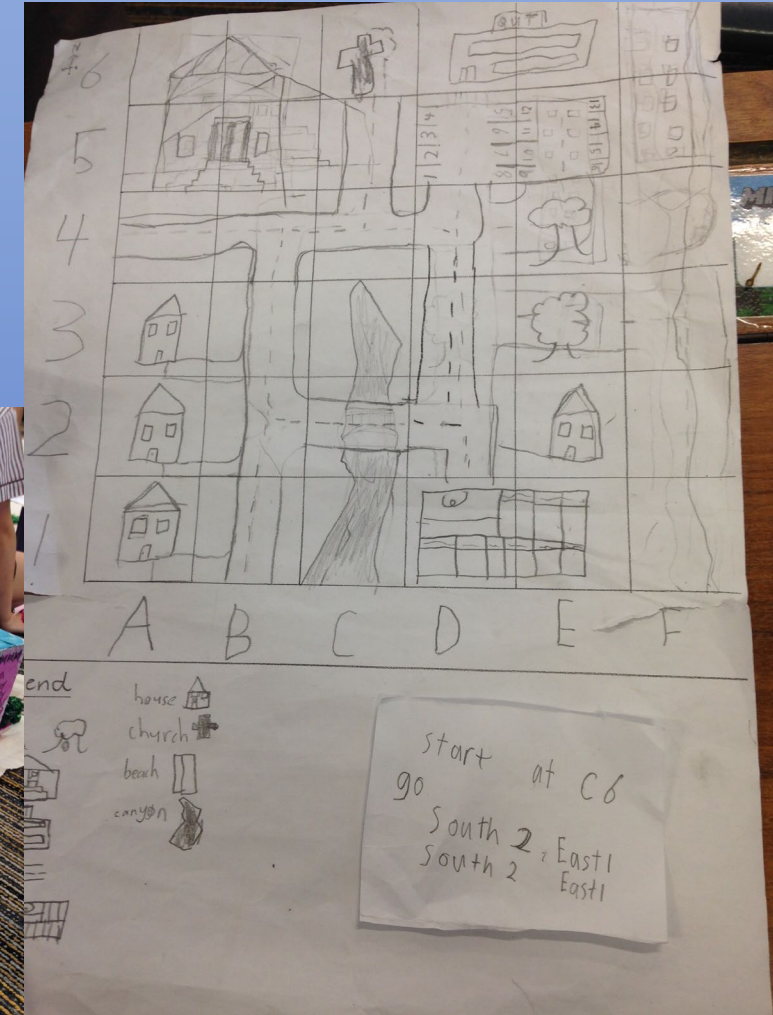


# Examples from the classroom (Primary school)

## Findings:

- Assimilation
- Implementation
- Assessment

Learning maps and  
computational thinking





# Examples from the classroom (Secondary School)

## Conclusion:

- Scaffolding support
- Support inquiry-based learning
- Promotes reflective thinking and creativity for both students and teachers

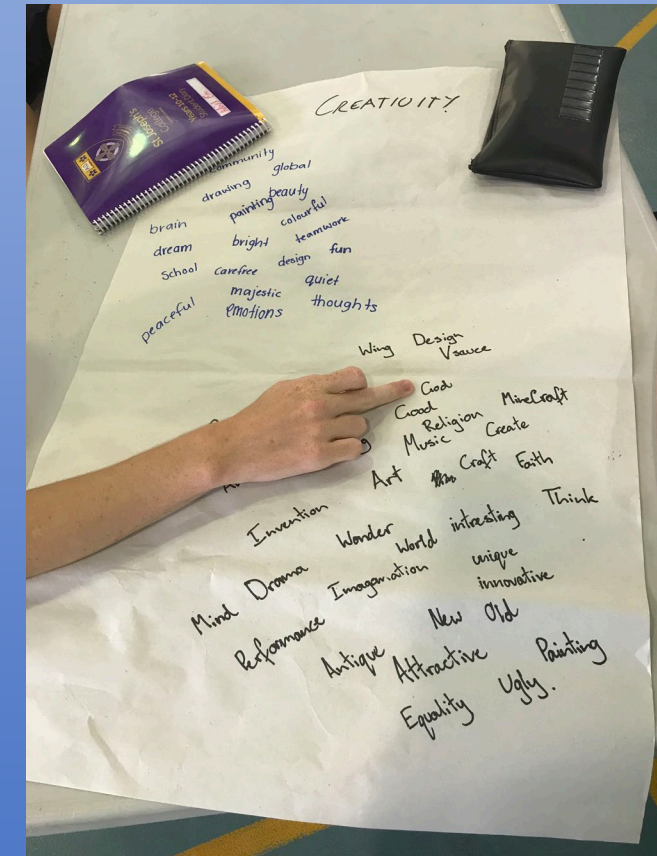
“Think like a wise man but  
communicate in the language of  
the people”

William Butler Yeats

[www.interaction-design.org](http://www.interaction-design.org)

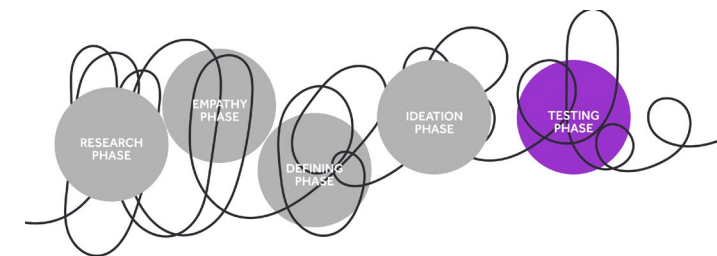


Biology and Design Thinking



Religion and Design Thinking

# Examples from the classroom



Chrissie Mitchell - 😄

# Chrissie Mitchell

Student Services Advisor



**Independent Schools  
Queensland**

choice & diversity



I believe schools should reflect the society we want to see. I am passionate about supporting school systems to realise their potential to do this, by working with them to become authentically inclusive communities that practice high quality, respectful pedagogy that engages ALL learners. With thirty years as a teacher, leader and consultant in Australia and the United Kingdom, I bring a wealth of knowledge of practical ways to support school communities to enable ALL learners to thrive.

I am privileged to be an advocate for marginalised and diverse learners. Being a teacher at heart, I am a champion of teachers. I believe these hardworking and skilled practitioners require effective structures to support the important work they do. I work with schools to develop teachers' skills that enable access for all learners through UDL, differentiated teaching, integration of STEAM subjects and inclusive pedagogy.

# Foil Challenge



## Foil Challenge: Create an Eating Tool

**What:** A rapid-cycle challenge to introduce TK-3rd graders to design thinking.

**Why:** To communicate the broad strokes of a design thinking challenge, and to give practice using a specific tool or material (in this case aluminum)

**When:** Prior to any deeper design thinking work, or any time you want to run a one-off challenge.

**Prerequisite Skills:** The ability to communicate about food and ask questions about food. The ability to fold and mold aluminum

**Who Needs to Be There?** At least 2 students and 1 teacher, and up to a full classroom of students.

**How This Activity Works:** Students interview one another in pairs about their favorite foods. They then use a square of aluminum to design a tool for eating this food.

**Materials Needed:** Aluminum and note paper (optional). You may modify the materials as desired.

**Duration:**

**10 minutes** Participants are put into pairs and asked to interview each other about two favorite foods. You can provide a piece of note paper. Ask everyone to pick one food that also has some family or cultural significance for them.

**2 minutes** After partners have interviewed each other, explain that they will spend a fixed amount of time designing a prototype of a custom eating utensil for their partner based on their favorite foods. They shouldn't really interact during this process.

**2 minutes** Give each person a square of tinfoil. You can emphasize that almost anything can be used for a low-fi prototype, and that they'll be surprised at what they can do with it. Everyone designs. You tell them when to stop.

**4 minutes** Partners present their designs to each other.

**4 minutes** You could have whole group share out, with people showing the utensil designed for them.

**10 minutes** Debrief, either as a whole group, or by putting partners into foursomes. Can have people talk about the interview experience, how it felt to have something design something especially for them, what the speed prototyping experience felt like, what learnings they had as they prototyped, etc.



<b>Empathise</b> What are your friend's needs?	<b>Define</b> What does this mean?
<b>Ideate</b> Your design idea	<b>Prototype</b> Now to make it
<b>Reflection</b> How did it work out?	

## Year 1 Design Technologies – 2023

Name: \_\_\_\_\_

I am learning to create and evaluate my ideas and designed solutions based on personal preferences.

I am learning to design solutions to simple problems using a sequence of steps and decisions.

### Empathise

What is the problem for the family on Windy Farm?

### Ideate

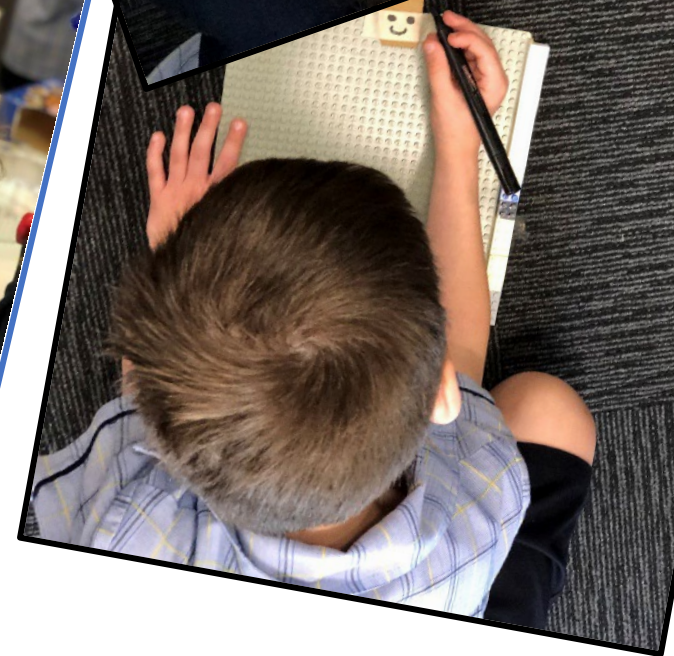
To help the family on Windy Farm, I plan to create this design to help with the wind or use the wind...

### Prototype

Here is what I made...

### Reflection

How did your design go? What would you change next times?







# Dragon Rider

Year 3 Design Technologies – 2023

Name: \_\_\_\_\_

I am learning to explain needs or opportunities and evaluate ideas and designed solutions against identified criteria for success.

I am learning to develop and expand design ideas and communicate these using models and drawings including annotations and symbols.

## Empathise

What are the features of my friend's dragon that I need to consider?

## Ideate

To create a home for my friend's dragon I plan to....

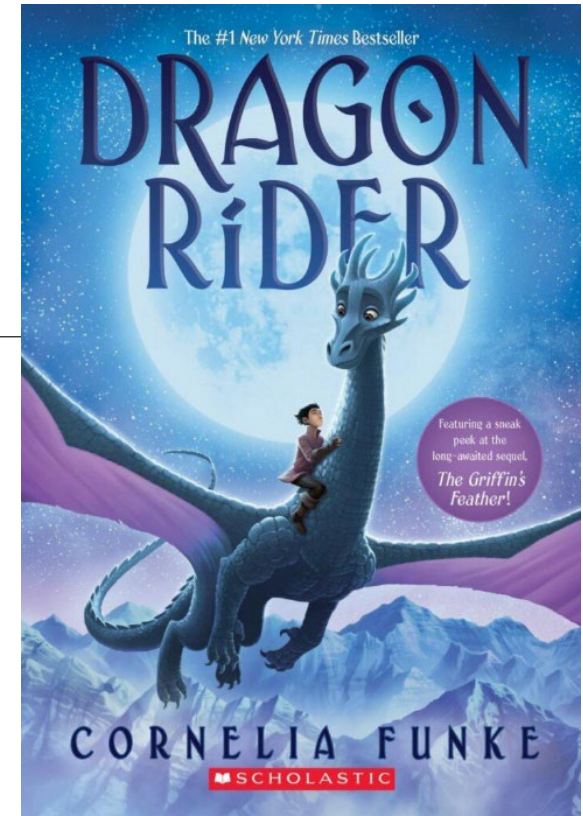
Please label your drawing.

## Prototype

Here is what I made...

## Reflection

How did your design go? What would you change next times?



# Design a shelter for your teddy



Learning Sequence 1	Teaching and Learning	Adjustments to Enable Access	Resources	Opportunities for Assessment & Feedback
<p><b>LI:</b> They suggest criteria for success, including sustainability considerations, and use these to evaluate their ideas and designed solutions.</p> <p><b>SC:</b></p> <p><b>Key Vocabulary:</b> Empathise, Define, Ideate, Prototype, Test/Reflect</p>	<p><b>Engage</b></p> <p>Using Ready, Set, Design resources introduce students to the design process.</p> <p>Empathise Define Ideate Prototype Test/Reflect</p> <p>During the Empathise phase ensure students have time for brainstorming.</p> <p>Brainstorming guidelines to share with the group:</p> <ul style="list-style-type: none"> <li>* Encourage wild ideas within the group. The sky's the limit! Sometimes it's the wild idea that helps form the final concept.</li> <li>* Go for quantity. The more ideas the better.</li> <li>* Write down or draw every idea the group has.</li> <li>* One person speaks at a time.</li> <li>* Defer judgment. In addition to never striking down an idea, If the group overly praises one member for their idea, it might limit the possibility of more ideas being expressed.</li> </ul>		<ul style="list-style-type: none"> <li>* Paper lunch bags</li> <li>* Challenge cards (can be a slip of paper or an index card)</li> <li>* Fastener items (for example, pipe cleaners, rubber bands, paper clips, string)</li> <li>* Surface items (for example, coffee filters, cardboard squares, balloons, paper)</li> <li>* Structure items (for example, straws, tongue depressors, wood skewers, tin foil)</li> </ul> <p>Stuff one lunch bag for each team. (You'll divide your group into teams of 2-4). Each bag should contain two or three fastener items, two or three surface items, and two or three structure items.</p>	

# Fast Fashion

# READY SET DESIGN



## Ready, Set, Design

is a quick group activity. It uses simple, inexpensive materials and is an effective tool for problem solving, creative thinking and team building. *Ready, Set, Design* is not just for designers but can be used by any audience as a way to engage in design thinking.

## Objective

Participants are asked to solve an open-ended problem with time and material constraints. Working in small groups, solutions are developed quickly and yield surprising solutions that may not have been immediately obvious.

## Materials

- Paper lunch bags
- Challenge cards (can be a slip of paper or an index card)
- Fastener items (for example, pipe cleaners, rubber bands, paper clips, string)
- Surface items (for example, coffee filters, cardboard squares, balloons, paper)
- Structure items (for example, straws, tongue depressors, wood skewers, tin foil)



no glue, tape or scissors are allowed. excluding these items forces participants to use materials more creatively!

## Prep

1 Stuff one lunch bag for each team. (You'll divide your group into teams of 2-4). Each bag should contain two or three fastener items, two or three surface items, and two or three structure items.

Here's a sample bag with 3 rubber bands, 2 coffee filters and 2 straws:



you can give every team the same set of materials, or you can give every team different materials. both will yield interesting results!

2 Write a challenge on each card. Every team in the room can get the same challenge, or every team can get a different challenge—it's up to you.

The challenge will drive each team's conversation. It's important that the challenge is open-ended to encourage different interpretations and creative thinking.

A poorly worded challenge might read something like, "Design a water bottle." Effective wording would be, "Design a way to transport water on the go."

You can create your own challenge statements based on appropriate subjects for your group, or use one of ours:

For younger groups, under age 13:

- "I need to protect myself from the rain."
- "I need to bring my lunch to school."
- "I need to collect and carry small things."
- "I need to keep my hands warm."
- "I need to carry groceries up several flights of stairs."

For older age groups, from teens to adults:

- "I need to create a safe way to cook in a home with no electricity."
- "I need to keep a new born baby warm in a place with no electricity."
- "I need to collect and carry water."
- "I need to create a safe light source for a home with no electricity."
- "I need to purify water from a stream."

3 Put one challenge card in each bag. Don't worry about matching materials with challenges—remember that you want your teams to use the materials in surprising and creative ways!

## With Your Group

- 1 Divide the group into teams of 2, 3, or 4.
- 2 Each team gets one of the bags that you prepared earlier.
- 3 Before the teams open the bags, introduce the activity and instructions.

Here's the way we like to introduce *Ready, Set, Design* at Cooper-Hewitt:

"Working in small teams, every group will receive a paper bag. In this bag you will find everyday materials and a challenge card. The first thing you're going to do is read your challenge card. Your team's job is to find a solution to that challenge using only the materials in your bag. You'll have 15 minutes to create a prototype\* of your idea."

\*A prototype is a small model of your final design



August 2020

### Years 5 and 6 Band Description

### Years 5 and 6 Achievement Standard

Learning in Design and Technologies builds on concepts, skills and processes developed in earlier years, and teachers will revisit, strengthen and extend these as needed.

By the end of Year 6, students will have had the opportunity to create designed solutions at least once in three technologies contexts: engineering principles and systems, food and fibre production and food specialisations; and materials and technologies specialisations. Students should have opportunities to experience designing and producing products, services and environments.

In Years 5 and 6, students critically examine technologies – materials, systems, components, tools and equipment – that are used regularly in the home and in local, national, regional or global communities, with consideration of society, ethics and social and environmental sustainability factors. Students consider why and for whom technologies were developed.

Students engage with ideas beyond the familiar, exploring how design and technologies and the people working in a range of technologies contexts contribute to society. They seek to explore innovation and establish their own design capabilities. Students are given new opportunities for clarifying their thinking, creativity, analysis, problem-solving and decision-making. They explore trends and data to imagine what the future will be like and suggest design decisions that contribute positively to preferred futures.

Using a range of technologies including a variety of graphical representation techniques to communicate, students represent objects and ideas in a variety of forms such as thumbnail sketches, models, drawings, diagrams and storyboards to illustrate the development of designed solutions. They use a range of techniques such as labelling and annotating sequenced sketches and diagrams to illustrate how products function; and recognise and use a range of drawing symbols in context to give meaning and direction.

Students work individually and collaboratively to identify and sequence steps needed for a design task. They negotiate and develop plans to complete design tasks, and follow plans to complete design tasks safely, making adjustments to plans when necessary. Students identify, plan and maintain safety standards and practices when making designed solutions.

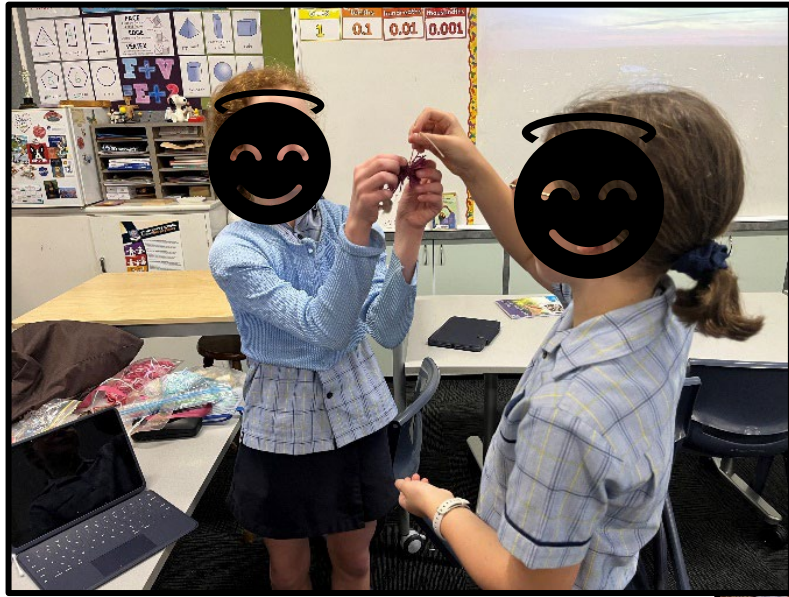
By the end of Year 6, students describe competing considerations in the design of products, services and environments, taking into account sustainability. They describe how design and technologies contribute to meeting present and future needs. Students explain how the features of technologies impact on designed solutions for each of the prescribed technologies contexts.

Students create designed solutions for each of the prescribed technologies contexts suitable for identified needs or opportunities. They suggest criteria for success, including sustainability considerations, and use these to evaluate their ideas and designed solutions. They combine design ideas and communicate these to audiences using graphical representation techniques and technical terms. Students record project plans including production processes. They select and use appropriate technologies and techniques correctly and safely to produce designed solutions

A Catholic Perspective emphasises Catholic Social Teaching on Human dignity, Common Good, Preferential Option for Poor & Vulnerable Subsidiarity and Participation and Stewardship of Creation as students critically examine technologies and design solutions for a preferred future. Students understand participation to society as a responsible citizen is a virtue and a moral obligation. Students recognise and use their giftedness and creativity thinking, creativity, analysis, problem-solving and make decisions and choices around ethical design solutions.

Learning Sequence 2	Teaching and Learning	Adjustments to Enable Access	Resources	Opportunities for Assessment & Feedback
<p>LI: students describe competing considerations in the design of products, services and environments, taking into account sustainability.</p> <p>SC: <u>explain</u> how and why food and fibre are produced in managed environments.</p> <p><u>identify</u> the relevant and significant aspects of a concept or problem, understanding that approaches may change depending on the subject or learning area</p> <p><u>identify the relevant aspects of a concept or problem, recognising gaps or missing</u></p>	<p><b>Fast Fashion</b></p> <p><u>Who enjoys shopping? What type of shopping do you like doing?</u></p> <p>Start by watching <a href="https://youtu.be/MHnD qelUh-4">https://youtu.be/MHnD qelUh-4</a></p> <p><u>How does watching this make you feel? What would you like to do about it?</u></p> <p>The video said there was ...tonnes of clothes discarded each <u>year</u>, how much is that?</p> <p>Using the <u>ebook</u> 'Fashionable Fabrics' (on OneNote) have the students form groups and learn about the fabric and then teach their classmates about it using PNI (Positive/Negative/Interesting). Select clothes from the pile that contains their fabric.</p> <p>Watch this video <a href="https://youtu.be/YOA0D0i5-fA">https://youtu.be/YOA0D0i5-fA</a></p> <p>Students choose 6 items of clothing from their wardrobe or use the ones from the teacher. They make sure that the items are very different, both in the way they feel and their purpose (e.g. shirt, raincoat, swimming costume, sports shorts, jumper, pyjamas).</p> <p>There are two ways we can become more sustainable in the way we produce textiles. We can:</p> <ul style="list-style-type: none"> <li>Produce textiles from more sustainable sources, and/or</li> </ul>		<p><a href="https://www.cleanup.org.au/fastfashion?gclid=CjwKCAjw-b-kBhB-EiwA4fvKrO5Q2lJelnZbCgCJ6Tw8J3zsf-Vq1D0ljAHI1QaA0ZWTEVu4iYzkvxoCy6QQAvD_BwE#Resources">https://www.cleanup.org.au/fastfashion?gclid=CjwKCAjw-b-kBhB-EiwA4fvKrO5Q2lJelnZbCgCJ6Tw8J3zsf-Vq1D0ljAHI1QaA0ZWTEVu4iYzkvxoCy6QQAvD_BwE#Resources</a></p>	

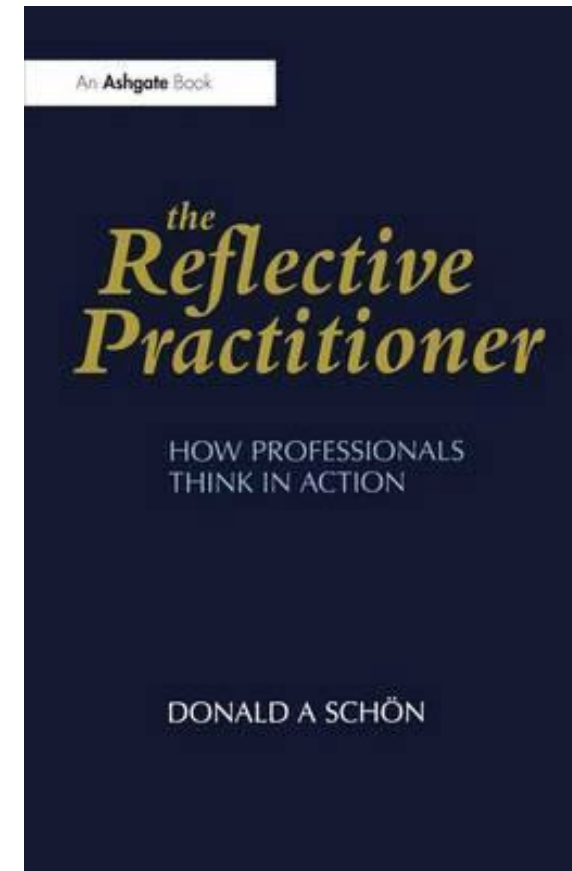
<p><u>elements necessary for understanding by using approaches and strategies suitable for the context</u></p> <p><b>Key Vocabulary:</b></p> <p>absorbent, acrylic, cotton, elastane, fabric, fibre, natural, nylon, polyester.</p>	<ul style="list-style-type: none"> <li>Recycle existing textiles</li> </ul> <p>Students use the eBook and the websites provided to complete the <u>Mind Map</u> with some examples. For each example, add a detail on how it is sustainable.</p> <p>Using information from the stimulus video <i>Manure Matters</i> - about designer Jalila <u>Essaidi</u> and the new materials she has developed from a waste material.</p> <p><b>English connection:</b></p>			
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# Design Thinking Tool Kit

- What methods would suit your teaching?
- What scaffolding support to support students learning?
- What resources do you need?

Discuss your answers with each other and give feedback





# Design Thinking Tool Kit *Resources*

## Books

- Buxton, B. (2010). Sketching User Experiences: Getting the Design Right and the Right Design. Morgan Kaufmann.
- Rogers, Y., Sharp, H., & Preece, J. (2019). Interaction design: beyond human-computer interaction. Wiley Publishing.

## Web resources

- **Nielsen Group**  
<https://www.nngroup.com/>
- **Interaction Design.Org**  
<https://www.interaction-design.org/>
- **D-School**  
<https://dschool.stanford.edu/resources/design-thinking-bootleg>  
(new)
- <https://dschool.stanford.edu/resources/the-bootcamp-bootleg>  
(old)
- IDEO  
<http://hcritang.org/uploads/Teaching/ideo-method-cards-2by1.pdf>
- Story Boarding  
<https://uxdesign.cc/how-to-storyboard-experiences-fc051e2bc04d>

# Design Thinking Tool Kit *Resources cont...*

## Books

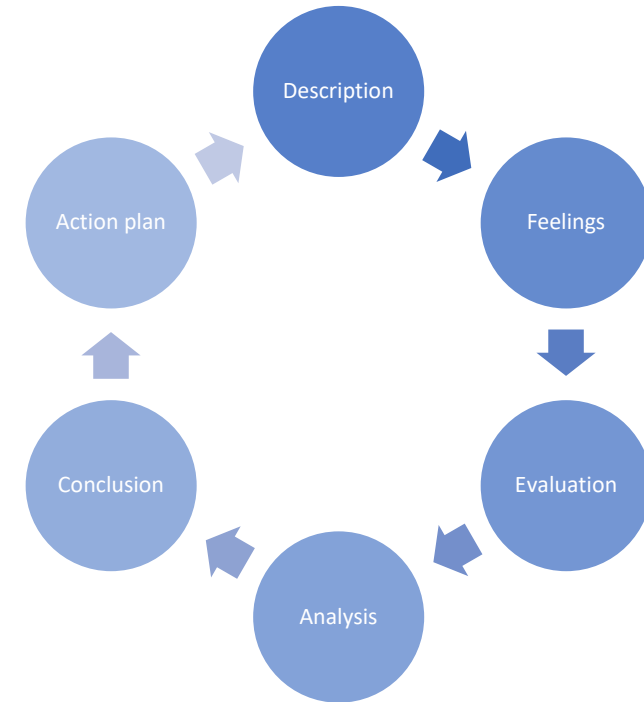
- Buxton, B. (2010). Sketching User Experiences: Getting the Design Right and the Right Design. Morgan Kaufmann.
- Rogers, Y., Sharp, H., & Preece, J. (2019). Interaction design: beyond human-computer interaction. Wiley Publishing.

## Web resources

- **Paper prototyping**  
[https://www.youtube.com/watch?v=k\\_9Q-KDSb9o](https://www.youtube.com/watch?v=k_9Q-KDSb9o) (paper toaster)
- **Wave.video (2022). “12 Simple Tips for Making Your Videos Look More Professional”:**  
<https://wave.video/blog/12-simple-tips-for-making-your-videos-look-more-professional/>

# Gibbs' Reflective Cycle

- **1. Description**  
Write a description of your experience or what happened. What did you do?
- **2. Feelings**  
Include personal feelings and thoughts. How did you feel about the experience?
- **3. Evaluation**  
Consider both negative and positive elements. What worked and what didn't?
- **4. Analysis**  
Think about all aspects of your experience. Why did they work or not?
- **5. Conclusion**  
What did you learn? How can it be improved or done differently?
- **6. Action Plan**  
What would you do differently next time or for future iterations? What changes would you make?

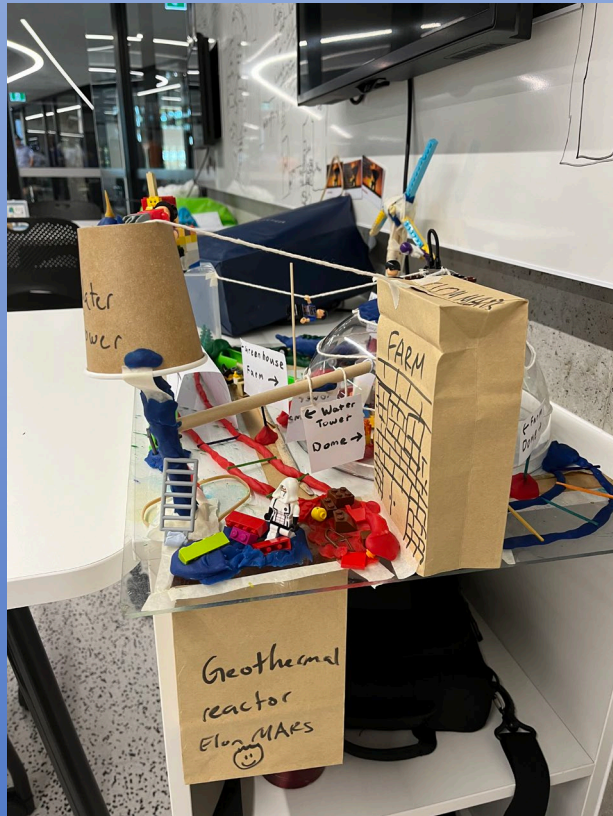


## Reflective Activity Example

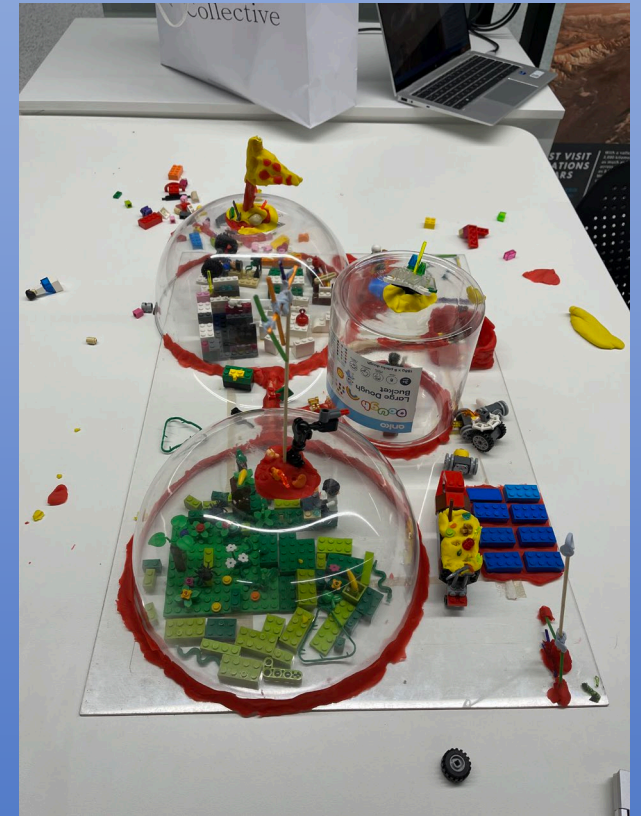
- **Reflect on the ideation methods you've been working with:**
  - What worked well or not?
  - What is your favourite method, explain why?
  - Which method helped produce the most ideas?
  - Which methods gave you best insight into the problems users would face?
  - How did using generative AI for ideation help/hinder your ideation process?



Thank you!



“Think like a wise man but  
communicate in the language of  
the people”  
William Butler Yeats  
[www.interaction-design.org](http://www.interaction-design.org)



Prototypes of habitats for living on Mars by Year 9 students



# Course Coordinator – Dr Marie Boden

[marieb@eecs.uq.edu.au](mailto:marieb@eecs.uq.edu.au)

“Dr Boden”, she/her

Research areas:

- Design for teaching and learning
- Humanised AI
- Participatory Design
- Computer Science & Engineering education
- Women in Computer Science and STEM

