What is Design?
What is Design?
Problem solving through Innovation

Sandy Walker
Flinders University
Design puts the world in your hands
Design helps us play games
Design helps us move
Design helps us play footie
• Design is the **creation** of the products and the services that people use.

• Design makes technology **usable** for people.

• Design **connects** people with technology.

• Design **solves** the problems that people have, focusing on:
  • Usability, Ergonomics and Aesthetics
  • Materials and Manufacturing Processes
  • Science, Engineering and Technology
  • Manages Innovation
  • **Sustainability**
Who is this person?
Who is this person?

He is an Industrial Designer.

He has actually “probably” at some stage, touched the lives of most of you here!
Who is this person?

He is an Industrial Designer.

**Jonathan Ive**
President of **Industrial Design** for Apple
Arguably THE most influential **Industrial Designer** alive today.
Why haven’t people heard about him?

He has touched the lives of millions

**Design** is like this…

Good Design is invisible to practically everyone but it touches us all.

[https://www.youtube.com/watch?v=3q6ULOT9Q4M](https://www.youtube.com/watch?v=3q6ULOT9Q4M)
think of everything that you have touched today…
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everything has been designed by someone, somewhere, involving: Design, Technology and Innovation
it helps all of these companies succeed
it creates new globally South Australian manufacturing companies
Design works at all levels
usability, aesthetics and ergonomics
technology, materials and processes
Design can be incremental or radical

https://www.youtube.com/watch?v=zSXMJaOGRIM
Design is not predictable
the design process
the design process

- Who is the user?
- What are the problems/peeves that people have?
- What benefits can the product provide?
- How can we make it simple and easy to use?
- Can everybody use it?
- Where will it be used?
- How will it be used?
- Is it COOL?

- What experience?
- Who will buy it?
- How much will they pay for it?
- Where will they buy it?
- Why will they buy it?
- How will they find out about it?
- What is it’s competitive advantage?
- Where will it be made?

- How will it be made?
- What materials will we use?
- How will we store energy?
- Is it sustainable?
- Is it functional?
- Can we make it more sustainable?

understand…
design @ flinders university
What is Design Thinking?
Design thinking

- refers to design-specific **cognitive activities that designers apply** during the process of designing a new product or service.

- It is a formal method for practical, **creative resolution of problems and creation of solutions**, with the intent of creating an improved future result.

- In this regard it is a form of solution-based, or solution-focused thinking – starting with a goal (a better future situation) instead of solving a specific problem.

- By considering both present and future conditions and parameters of the problem, alternative solutions may be explored simultaneously.

- This approach differs from the analytical scientific method, which begins by thoroughly defining all parameters of a problem to create a solution.

- Because design **thinking is iterative**, intermediate "solutions" are also potential starting points of alternative paths, including redefining of the initial problem.
Design thinking employs **divergent thinking** as a way to ensure that many possible solutions are explored in the first instance, and then **convergent thinking** as a way to narrow these solutions down to a final solution.

Divergent thinking is the ability to offer different, unique or variant ideas adherent to one theme while convergent thinking is the ability to find the single "correct" solution to the given problem.

Design thinking encourages divergent thinking to ideate **many solutions** (possible or impossible) and then uses convergent thinking to prefer and realize the best/optimum solution.
Design Thinking types

Discover
- Initial Ideas or Inspiration
- Establishment of User Needs
  - Market Research
  - User Research
  - Design Research
  - Technology Research
  - Interviews & Insights Gathering
  - Observation & Shadowing
  - Empathic Modelling
  - Information Management

Define
- Interpretation & Alignment of Findings to Project Objectives
  - Information Analysis
  - Synthesis & Identification
  - Project Refinement
  - Project Management
  - Project Sign-off

Develop
- Design-Led Concepts & Proposals Iterated & Assessed
  - Ideation
  - Multi-Disciplinary Working
  - Visual Management & Progress
  - Testing & Prototyping
  - Review & Improvement

Deliver
- Process Outcome(s) Finalised & Implemented
  - Final Testing & Approval
  - Production
  - Launch of Outcome(s)
  - Evaluation & Further Feedback
  - Future Work
**Design Thinking**

**1. Discovery**
- **Step 1**: Understand the Challenge
- **Step 2**: Prepare Research
- **Step 3**: Gather Inspiration

**2. Interpretation**
- **Step 2-1**: Tell Stories
- **Step 2-2**: Search for Meaning
- **Step 2-3**: Frame Opportunities

**3. Ideation**
- **Step 3-1**: Generate Ideas
- **Step 3-2**: Refine Ideas

**4. Experimentation**
- **Step 4-1**: Make Prototypes
- **Step 4-2**: Get Feedback

**5. Evolution**
- **Step 5-1**: Track Learnings
- **Step 5-2**: Move Forward

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The Design Thinking process oscillates between divergent and convergent thinking modes. It can be helpful to be aware of the node that our team is at the design phase we are working through.
Unlike analytical thinking, design thinking includes "building up" ideas, with few, or no, limits on breadth during a "brainstorming" phase, or other "creative thinking technique".

The phrase "thinking outside the box" has been coined to describe one goal of the brainstorming phase and is encouraged, since this can aid in the discovery of hidden elements and ambiguities in the situation and discovering potentially faulty assumptions.

Another version of the design thinking process has seven stages:

- define the problem
- research the problem
- ideate
- prototype
- test and choose
- Implement
- reflect and learn
any questions?

don’t imitate! Innovate!