DESIGN THINKING

AT THE INTEGRATED DESIGN LAB

RAPID PROTOTYPING | Introduction

RAPID PROTOTYPING | Introduction

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DESIGN THINKING – RAPID PROTOTYPING

- Human-Centered Design
- Creating Project Definition
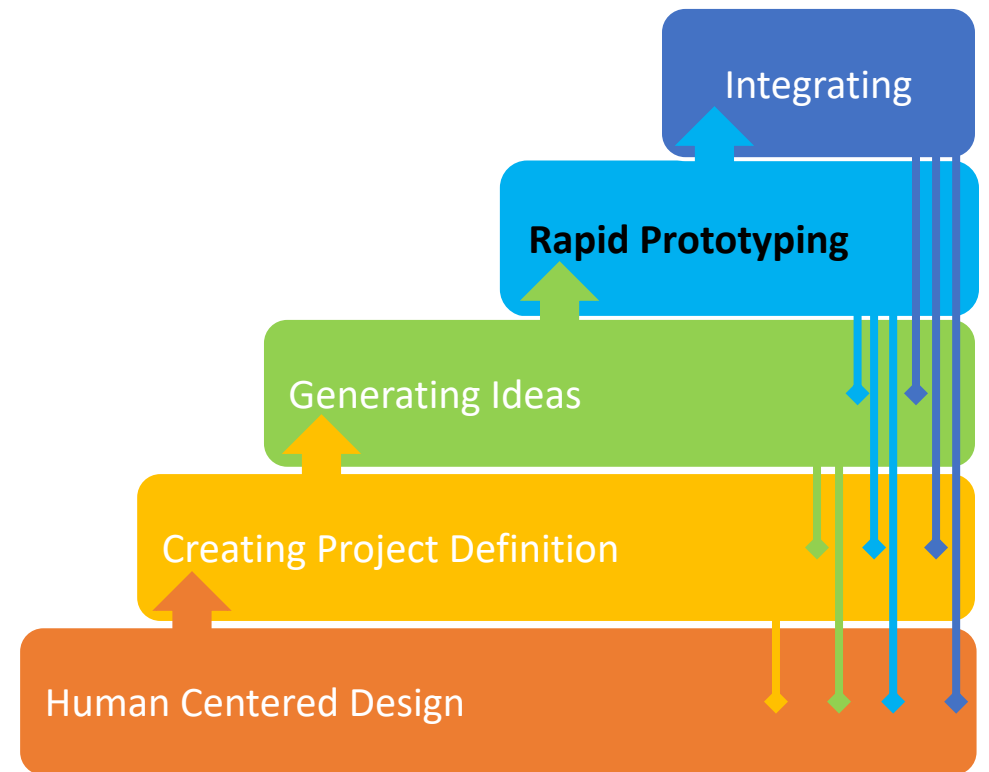- Generating Ideas
- **Rapid Prototyping**
- Integrating

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DESIGN THINKING – RAPID PROTOTYPING

Upon completion of this module the student will be able to:

- Learn how to take ideas and test them using rapid prototyping methods

- Embrace failure as an opportunity within the design thinking process

- Develop methods for assessing prototypes and incorporating user feedback

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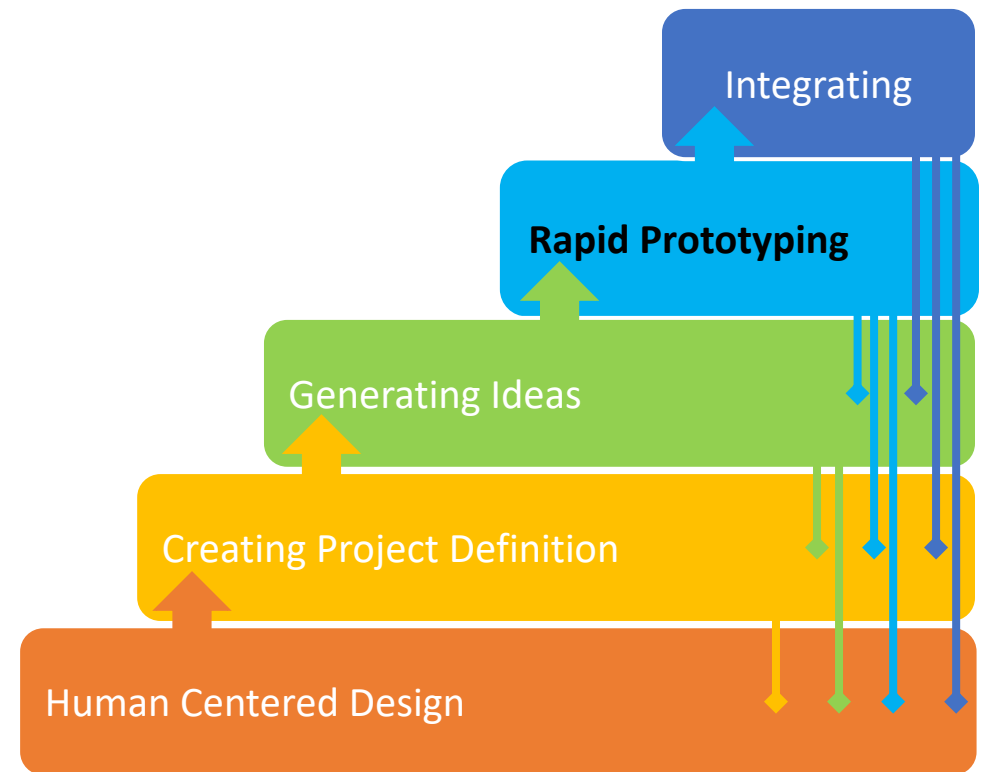COMMUNITY COLLEGE

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DESIGN THINKING – RAPID PROTOTYPING

During Rapid Prototyping, the intent is for the designer to *try* many different ideas - with the expectation that most will fail.

Integrating

Rapid Prototyping

Generating Ideas

Creating Project Definition

Human Centered Design

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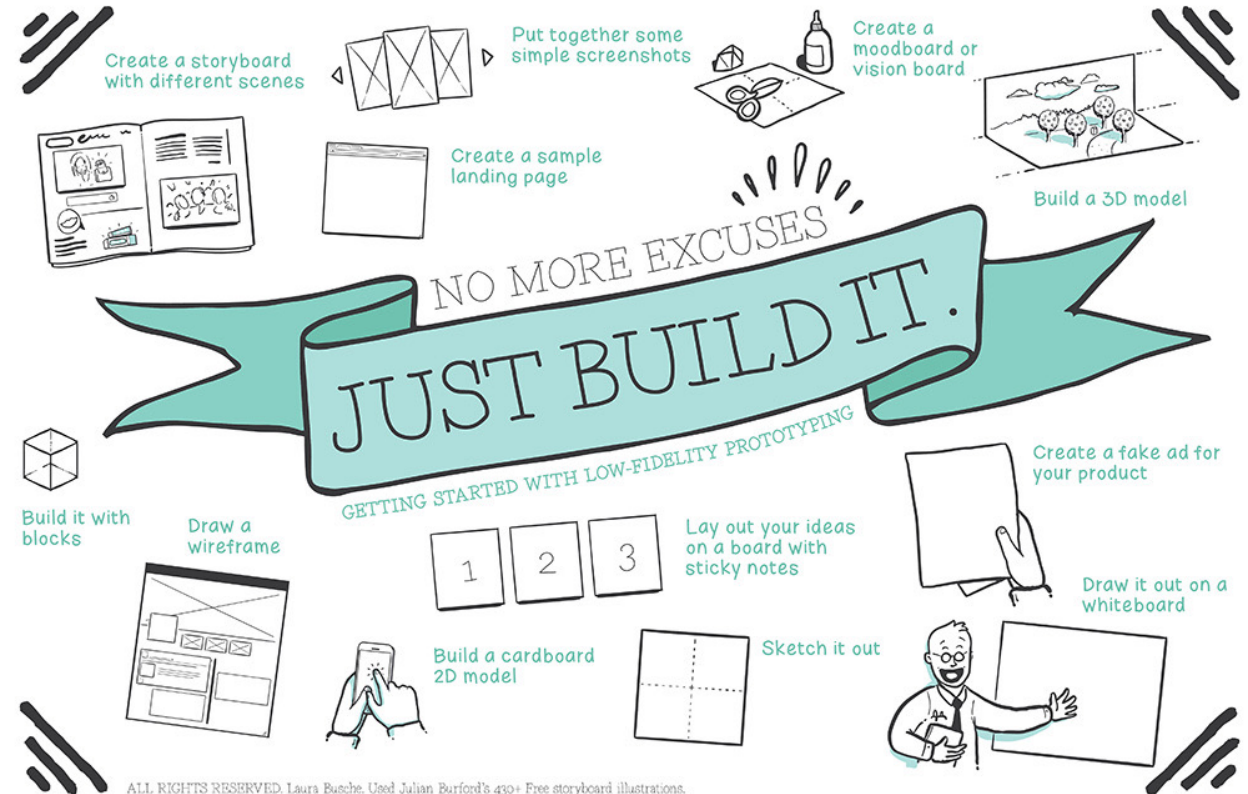COMMUNITY COLLEGE

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DESIGN THINKING – RAPID PROTOTYPING

The designer has already discarded the least feasible ideas in the previous stage *Generating Ideas*, so Rapid Prototyping is about trying out what *could* be feasible.

Integrating

Rapid Prototyping

Generating Ideas

Creating Project Definition

Human Centered Design

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DESIGN THINKING – RAPID PROTOTYPING

Rapid Prototyping is a stage where it is particularly important to be willing to recognize an issue, re-evaluate *and try again*.

REMEMBER THE HUMAN(S)

Issues will occur within the lifecycle of any design, but the tools and methods of Design Thinking will help a designer maintain their focus on the most important element: the human.

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FAIL FAST AND FAIL CHEAPLY

- This is the stage to *expect* things not to work – even multiple times!

- "Failures" during Rapid Prototyping are an opportunity to analyze the situation and try again *before* there has been a significant investment of time or resources in a non-viable solution.

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CREATING RAPID PROTOTYPES

At this stage, the focus needs to be on creating prototypes that give the designer and client a sense of the final solution, but without a significant investment of time or money.

LOW-FIDELITY PROTOYPES
Mock-ups or examples of a potential solution made with inexpensive materials
Examples: paper, cardboard, or clay

DESIGN SOFTWARE
Create 3D renderings of potential solutions

STORYBOARDING
Walk through a process or story by writing down or sketching each step or scene to visualize the flow.

Additional information about these strategies can be found in the **Module 4 Supplementary Document**.

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EVALUATING PROTOTYPES

Although you will not be making any final decisions during this phase, it is necessary to evaluate the prototypes you have created to ensure they do not have an unintended human impact or consequence.

The best way to do this is by testing your prototype on actual humans using the **Prototype Evaluation** tools like the Learning Launch shown here.

Learning Launch Design	
Key Assumptions to Test	**Learning Launch # _____**
	Who
	Where
	How
	Cost
	Time
Key Assumptions to Test	**Learning Launch # _____**
	Who
	Where
	How
	Cost
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EVALUATING PROTOTYPES

Napkin Pitch

CONCEPT NAME:

The Big Idea	Needs/Benefits
Execution	Business Rationale

Or the Napkin Pitch.

Both tools allow you to evaluate your prototypes quickly and efficiently.

More details about these prototype evaluation tools can be found in the **Module 4 Supplementary Document**.

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DESIGN THINKING – RAPID PROTOTYPING

SUMMARY: The designer will narrow the field of possible solutions and develop prototypes for testing.

The designer's roles are to prototype and evaluate while maintaining focus on the client's need.

try

"Fail often so you can succeed sooner"
– Tom Kelley, Author and General Manager, IDEO

"If plan A fails, remember there are 25 more letters." – Chris Guillebeau

"I have not failed. I've just found 10,000 ways that won't work."
– Thomas Edison

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DESIGN THINKING

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You've completed RAPID PROTOTYPING | Introduction

Next: RAPID PROTOTYPING | CASE STUDIES

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MODULE 4 SUPPLEMENTARY DOCUMENT—RAPID PROTOTYPING

LOW-FIDELITY PROTOTYPING

Low Fidelity Prototyping is "thinking with your hands". Designers in companies such as Nintendo use low-fidelity prototyping. Designer Kazuyuki Motoyama explains that the only way to actually know what a Miiverse would feel like was to hold it. That's when he built this prototype out of cardboard. (Image credit: Nintendo)
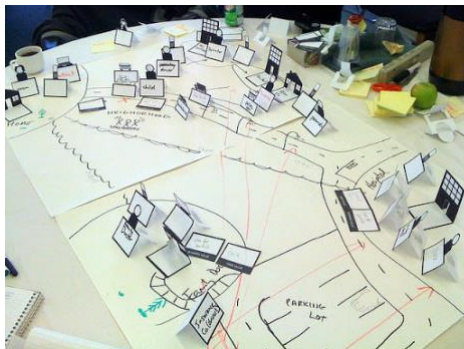

Ideals of Low Fidelity Prototyping:

- Build cheaply and easily
- Encourage feedback to focus on concept rather than aesthetics of execution
- Less investment of time, energy, emotion and money
- Room for iteration

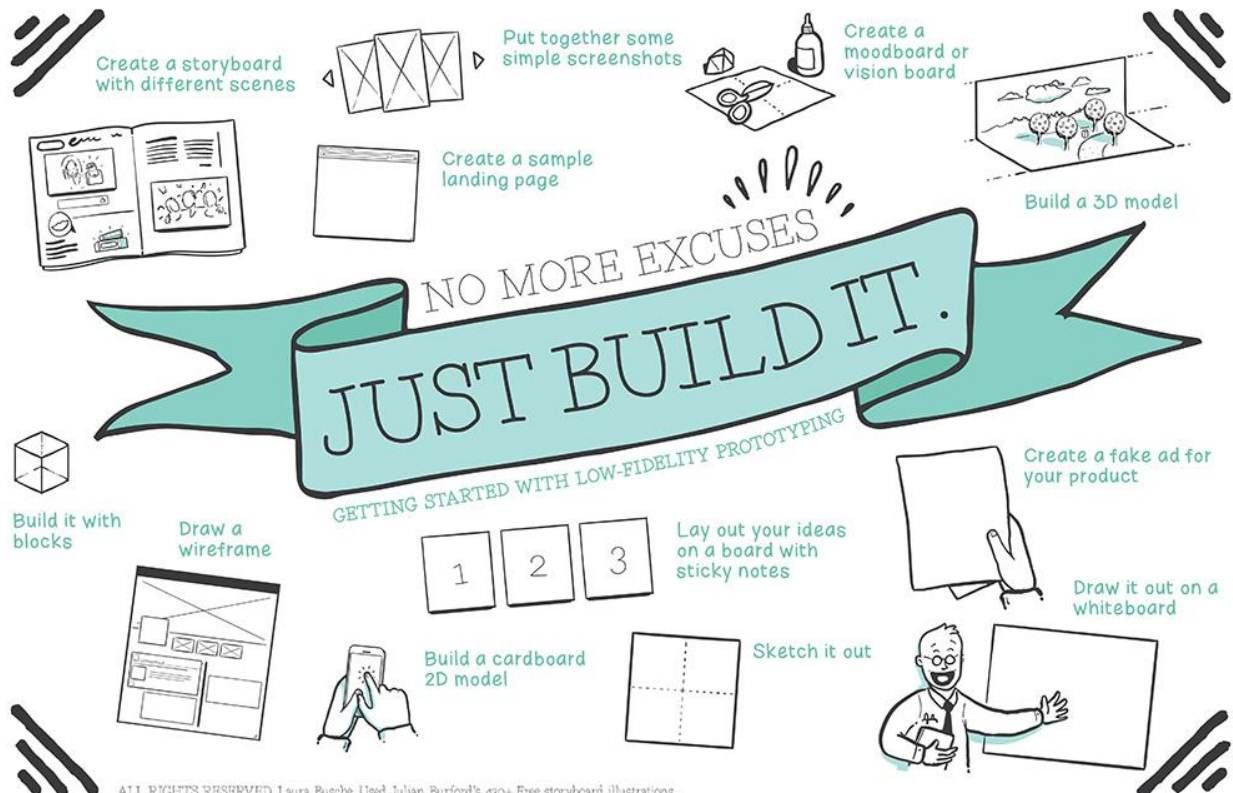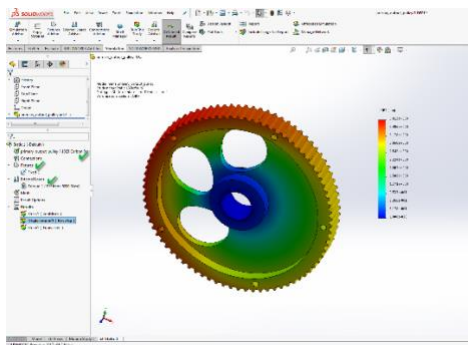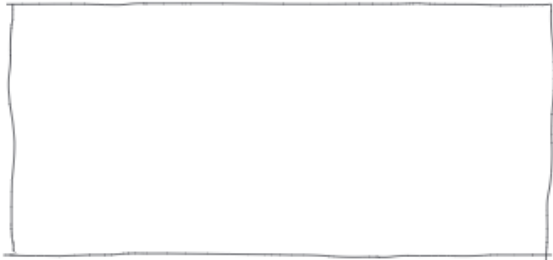Tools & Material Examples of Low Fidelity Prototyping
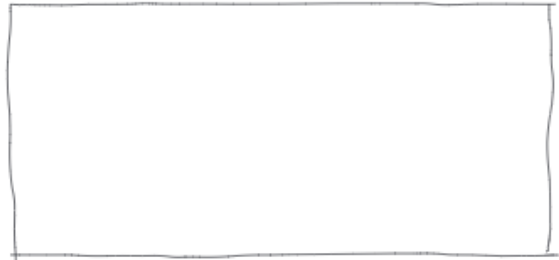
- Paper

- Cardboard

- Simulations

STORYBOARDING

You can use the template below to draw out ideas for a process or steps in a potential solution. Sometimes the solution to a design thinking problem is not going to be a physical product. When that is the case, sketching or storyboards can provide a good way to present ideas to client or users.

PROTOTYPE EVALUATION

During the Rapid Prototyping phase, you need to test out not only whether your ideas are physically feasible, but also get a sense of how other people (ideally the end users, but any human will work during this step!) may use or perceive the idea. There are many ways to assess this informally but, if you need a formal technique, the **Learning Launch** and **Napkin Pitch** are good places to start. In both of these techniques, you present your ideas (in prototype or storyboarded form) to someone outside of the design team and have them provide feedback using the templates below.

Learning Launch Design

Key Assumptions to Test	Learning Launch # _____
	Who
	Where
	How
	Cost
	Time
Key Assumptions to Test	**Learning Launch # _____**
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Napkin Pitch

CONCEPT NAME:

The Big Idea	Needs/Benefits
Execution	**Business Rationale**