9.1. Design Thinking and Application of Learning

Design thinking is an approach towards **SOLVING** real world design problems by **UNDERSTANDING** users' needs and **DEVELOPING** key insights to solve those needs.

Step 1: Empathy (👀 See)

Empathy involves the critical process of **IDENTIFYING** a good design problem. It can be through **INTERVIEWING** and asking questions and **BRAINSTORMING** to come out with multiple issues and problem areas.

Step 2: Define (🙋🏻‍♂️Focus)

Using the information gathered in the Empathy phase, we can **ANALYSE** the observations and use them to define the core problems that has been identified. These definitions are called **PROBLEM STATEMENTS**.

Step 3: Ideate (💡 Think)

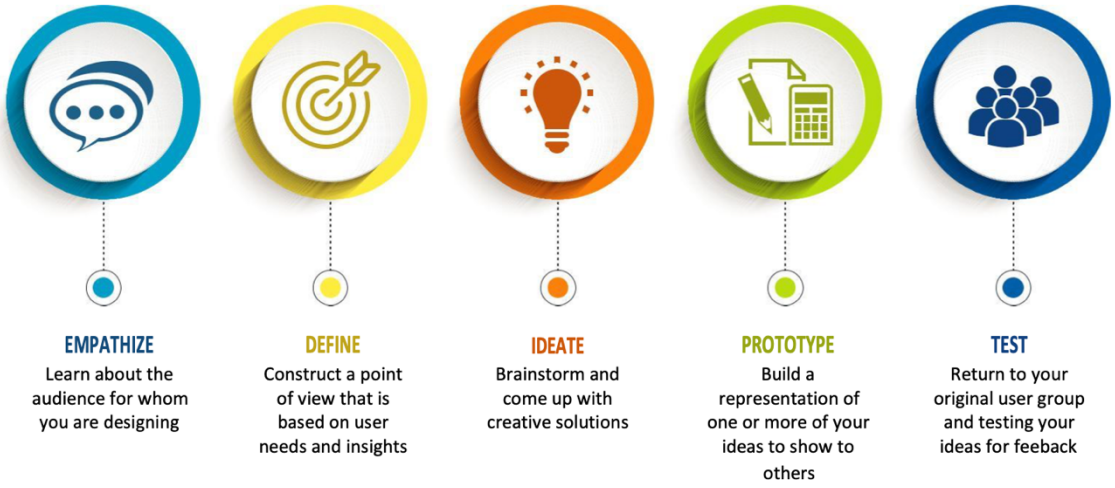
Ideation is the creative process of **GENERATING**, **DEVELOPING**, and **COMMUNICATING** new ideas, where an idea can be visual, concrete, or abstract. Ideation comprises all stages of a thought cycle, from innovation, to development, to actualization.

Step 4: Prototyping (🛠️ Make)

Prototyping process involves **DEVELOPMENT** of an early representation of the final **SOLUTION**.

Step 5: Testing (🔄 Try it out!)

Testing is the final stage of design thinking. This is where the prototype solution is tested in real life and in real time by the **ACTUAL USERS**.



🚦 Theme: Environmental Sustainability

👀 See – Spot the problems

Understand the people, animals, or environment affected by the sustainability challenge.

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Questions to consider:

- *Who or what is affected by this environmental issue?*
- *What problems or challenges do they face because of it?*
- *How could your AR/VR experience help people understand or address this issue?*

🙋🏻 Focus – Choose one problem to solve and describe it

Clearly describe the environmental problem you want to address.

<u>The selected problem to focus is:</u>

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Questions to consider:

- *What is the main sustainability problem you want to solve or highlight?*
- *What do you want users to learn, see, or feel through your AR/VR project?*

💡 **Think – Come up with ideas!**

Brainstorm as many creative ideas as possible to communicate or solve the problem.

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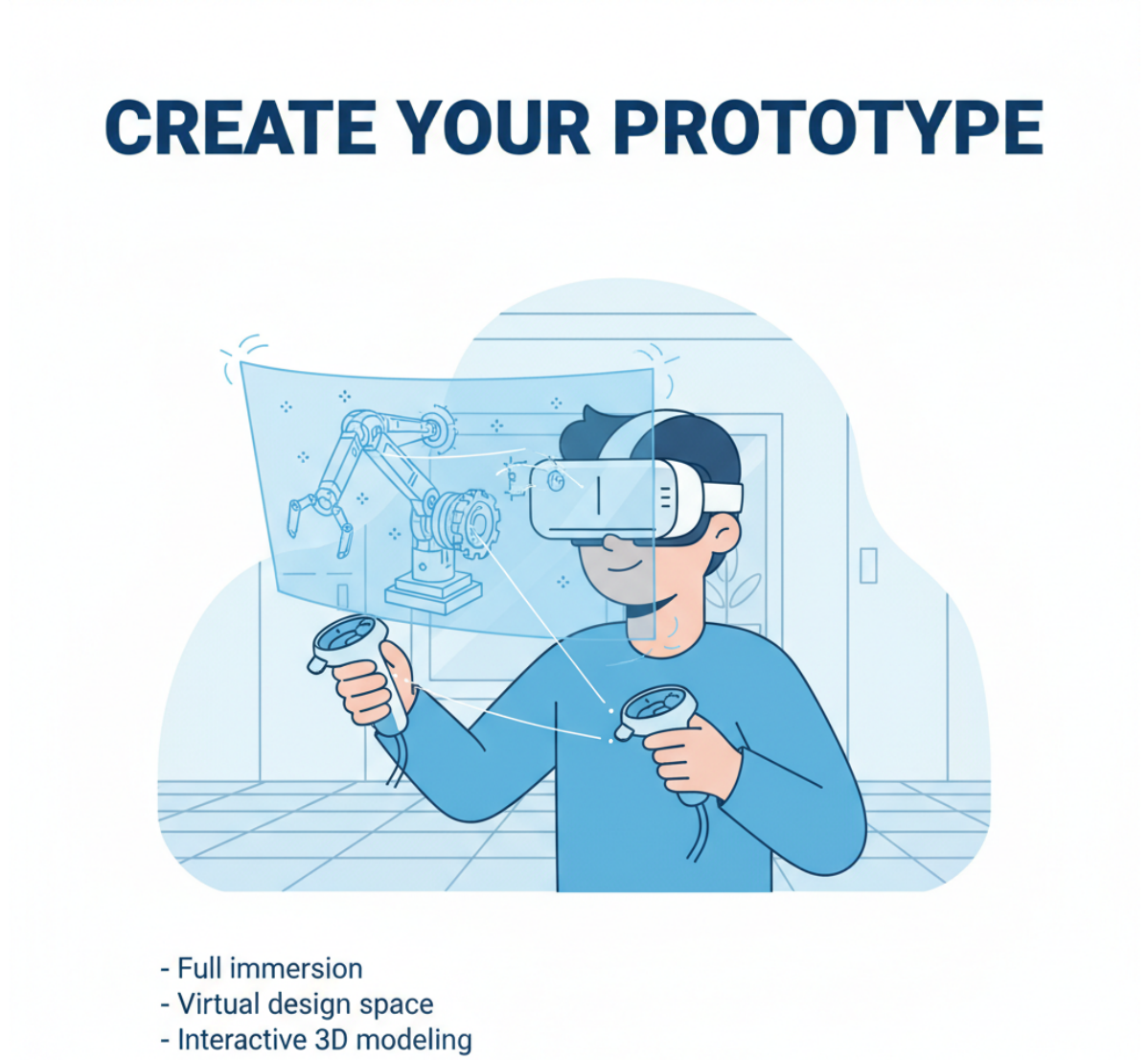
Questions to consider:

- *What AR or VR elements could you use to show your sustainability message?*
- *How could your project teach people to take action or think differently?*
- *Which ideas are possible to create within your time and tools?*

Draw or sketch out your ideas here!

🛠️ Make – Build your prototype!



Questions to consider:

- *What objects, scenes, or interactions will you include first?*
- *How can users experience your environmental story in an engaging way?*
- *Can you test your prototype in a small scale before finalizing it?*

🔄 Test – Try it out!

Share the project and test it out using the VR Goggles provided.

What happened when you tested it?

✅ It worked! / ❌ Needs fixing

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How can the prototype be improved?

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Questions to consider:

- *Does it clearly show the environmental issue or sustainability idea?*
- *Is it engaging and understandable for users?*
- *What changes or improvements would make it better before the final project?*

📣 Share – Tell the story

What are some ways your project had addressed on the problem?

Problem we addressed:

_____

How our solution helps:

_____

Why it matters for the future:

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✨ Reflection – What I've learnt!

One thing I learned is…

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Challenge: Take your VR Project Further!

For students who want to push their AR/VR projects to the next level, this section offers optional advanced challenges. You are challenged to explore ways to make your project more interactive, creative, and impactful. If the following are not achieved in your project, please attempt the challenges:

Challenge 1: Interactive User Experience

- Add interactive elements to your project.
- Example: Make objects respond when users click/tap them, or trigger animations when the user moves to a certain area in VR.

Challenge 2: Multi-Step Environment

- Create a project with multiple layers or stages for users to explore.
- Example: Start with a polluted area, then allow users to interact to improve it, showing progress in multiple steps.

Presentation and Review

Although you may have a creative and innovative solution and your prototype has been tested and refined multiple times, you will still need to present your ideas to your audience. As such, your presentation techniques are especially important.

Techniques to take note of:

- **Start with a clear purpose**

  Clearly define the purpose of your prototype at the beginning of your presentation. Explain what problem it solves or what need it fulfils. This sets the context for your audience.

- **Tell a story**

  Structure your presentation as a story to make it more engaging. Start with the problem or opportunity, introduce the prototype as the solution, and take your audience through its features and benefits.

- **Highlight key features**

  Identify and emphasize the key features of your prototype. Explain how each feature addresses a specific aspect of the problem or contributes to the overall solution.

- **Demonstrate functionality**

  This could involve showcasing its different functions, interactions, or any unique aspects that set it apart. A live demonstration can leave a lasting impression.

- **Practice handling the prototype**

  Practice handling the physical prototype beforehand to ensure smooth transitions and avoid fumbling during the presentation. Familiarity with the prototype will boost your confidence and make the presentation more polished.

- **Provide a call-to-action**

  Conclude your presentation with a clear call to action. This could involve inviting further discussion, seeking feedback, or proposing next steps in the development process.

Remember to be enthusiastic and passionate about your prototype, as your excitement can be contagious and help captivate your audience.