D'source Project

Open Design School

MoE's Innovation Cell

# Brain-storming, Idea Sketching, SCAMPER, lateral Thinking

## Design Thinking & Innovation Tools

Section: T9, Week 9

# Design Thinking & Innovation (DT&I)

Section: T9

Week 9

# Design Thinking & Innovation (DT&I)

**Prof. Ravi Poovaiah**
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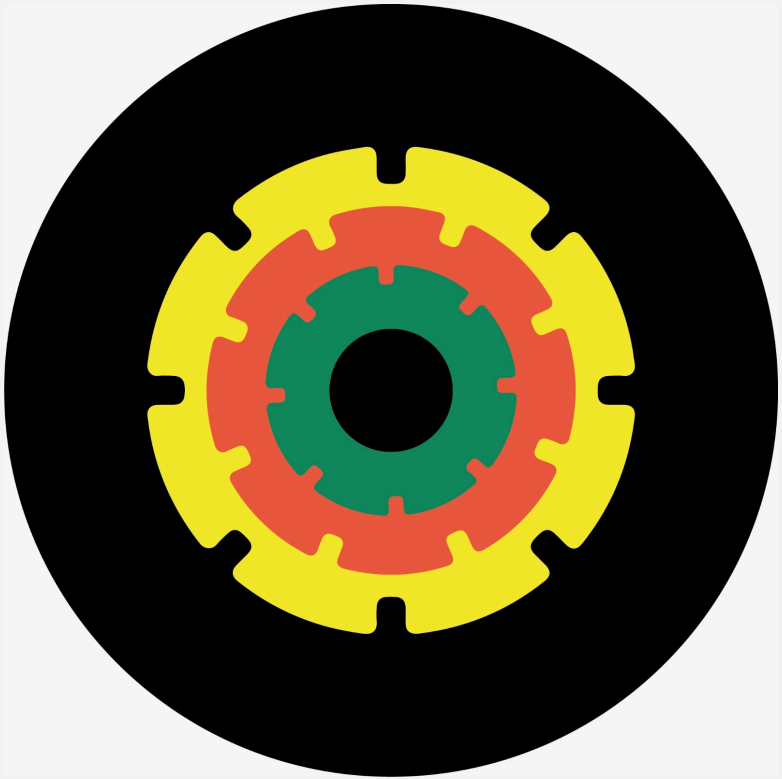


# DT&I Tools

## T9 Brain-storming, Idea Sketching, SCAMPER, Lateral Thinking

Module T9:

THINK!
DESIGN

T9.1

# Brain-storming for Ideation

# How to use Brain-storming for Ideation?

**Brain-storming** for Ideation is known as the **creative thinking technique** to **generate key-words or ideas** associated with the problem that you are trying to solve.

- **Freely storm the mind** to spontaneously generate ideas **without any criticism.**

- **Generate several ideas** – the more the better

**- Conceive of unusual, unexpected, creative ideas**

**- Combine ideas and improve them**

Reference: Alex. F. Osborn

# Brain-Storming:

## Steps in Brain-Storming:

**1. Note down the Problem that you have selected for Brain-Storming**
(A clear statement of the problem is recommended)

**2. Brain-storm for associated ideas as key-words or sketches and note these down**
(as scribbles or sketches on post-it notes, online on Miro/Figma, etc.)

**3. Note down the key-words/sketches randomly and not in any particular order**
(so that cross-relationships, combinations and improvements could be made)

**4. Do not criticize anyone – all keywords/sketches or ideas should be welcome**
(even unusual ones)

**5. Do this until one runs out of new key-words/sketches**
(greater the number, the more the variety)

Reference: T1.0-006

# Example of Brain-storming for Ideation

Lets say the redefined statement for the problem is:

**Design an engaging 'Play and Learn' Constructive Toy for Children in the age group of 3 to 6 with features of Collaboration, Sharing and Storytelling using Sustainable Materials**

T9.2

# Idea-Sketching for Ideation

# How to use Idea-Sketching for Ideation?

**Idea-Sketching** involves visually sketching the ideas created out of brain-storming.

**Idea-Sketching** is useful to create quick rough sketches of ideas or concepts that you have in your mind. **Sketching makes ideas visible.**

**Idea-Sketching** is where the initial ideas begin to build, so that you can envision what you are designing.
**Sketching is mainly to help explore and explain design ideas.**

# Can anyone do Idea-Sketching?

**Idea-Sketching** is a rough quick sketch that can be done easily by anyone.

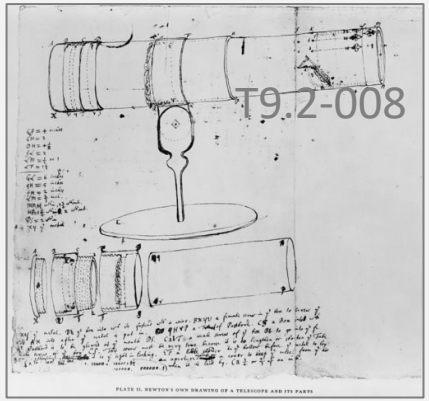
**Idea-Sketches** can be **easily created** using pen and paper or a whiteboard. The idea is to keep your sketches **fast, rough and dirty**. This helps you worry less on design aesthetics and focus more on rapid formulation of ideas.

# Examples of Idea-Sketching:

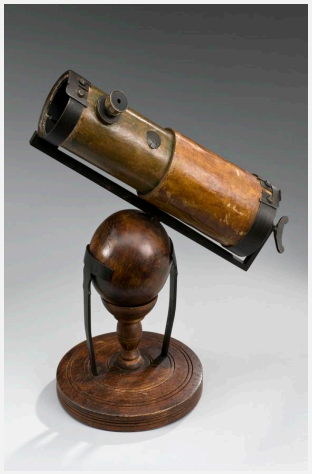
**Here are shown rough sketches done by Scientists, Architects, Artists, Film Makers, Animators, Product Designers and Graphic Designer.**

What you'll notice is that these sketches are important to show and visualize concepts before they are finalised and made.

# Lets look at some idea-sketches by Scientists:

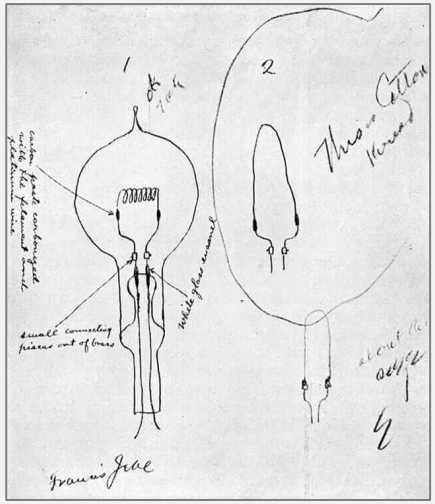



Idea sketch by **Isaac Newton** showing a reflecting telescope and its components



Actual prototype of the first reflecting telescope

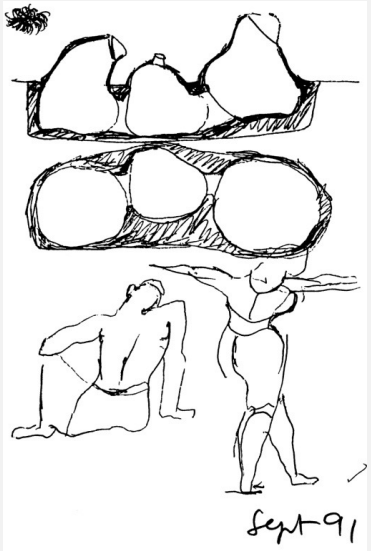
Idea sketches of early lightbulb, with comments by **Thomas Edison**



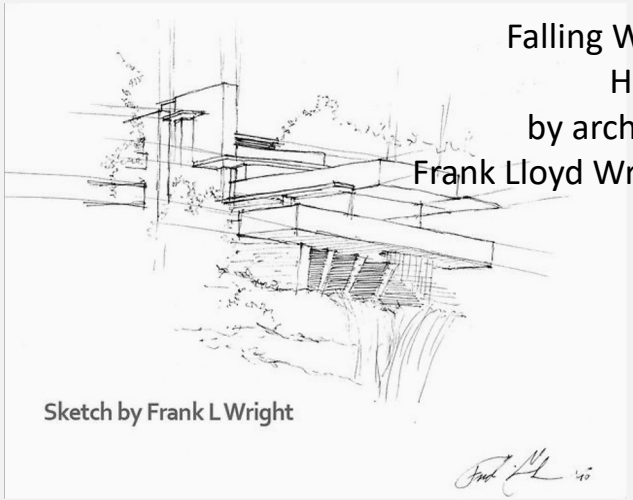
Final prototype of the first bulb

These are rough idea sketches, sufficient for showing the concept

# Lets look at some idea-sketches by Architects:



Idea sketches and final design of Hussain-Doshi Guha by architect **B V Doshi**




Falling Water House by architect Frank Lloyd Wright

Idea sketches to show the concept

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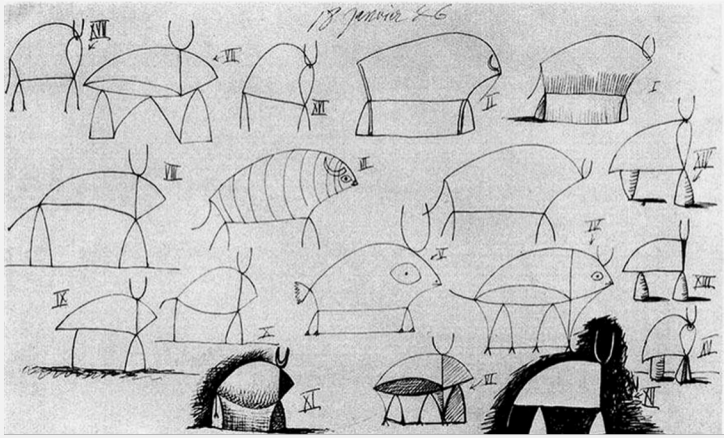
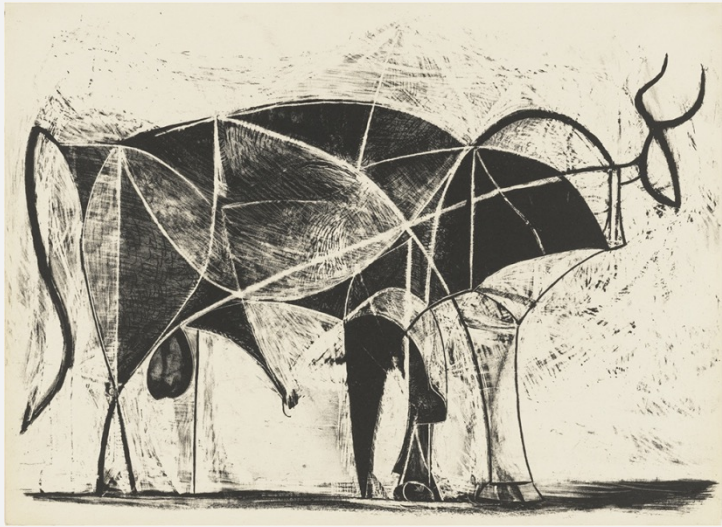
# Lets look at some idea-sketches by Artists:



Rapid sketches and final drawing of Bull by artist **Pablo Picasso**

Rough Study sketches and final painting of Monalisa by artist **Leonardo Da Vinci**



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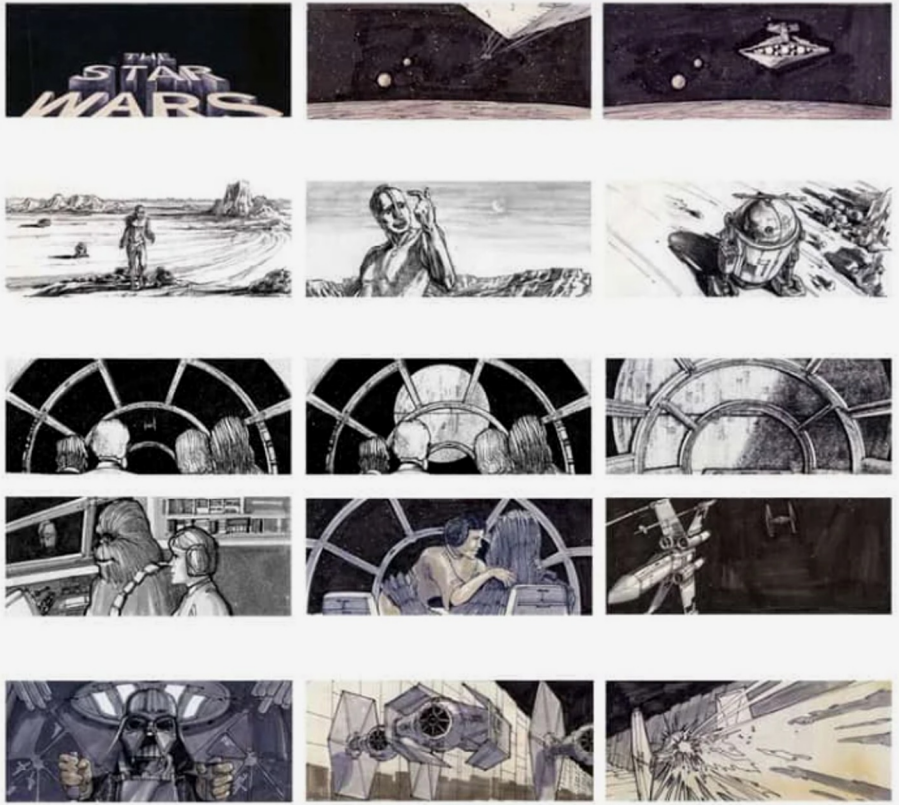
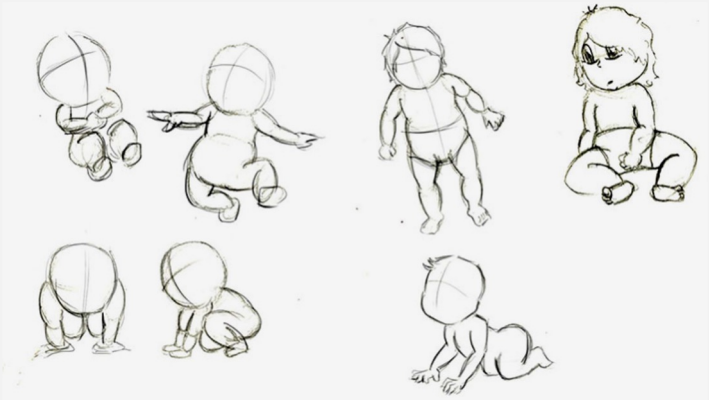
# Lets look at some idea-sketches by Film Makers:

Story board Idea sketches for the film Pather Panchali by the film director **Satyajit Ray**

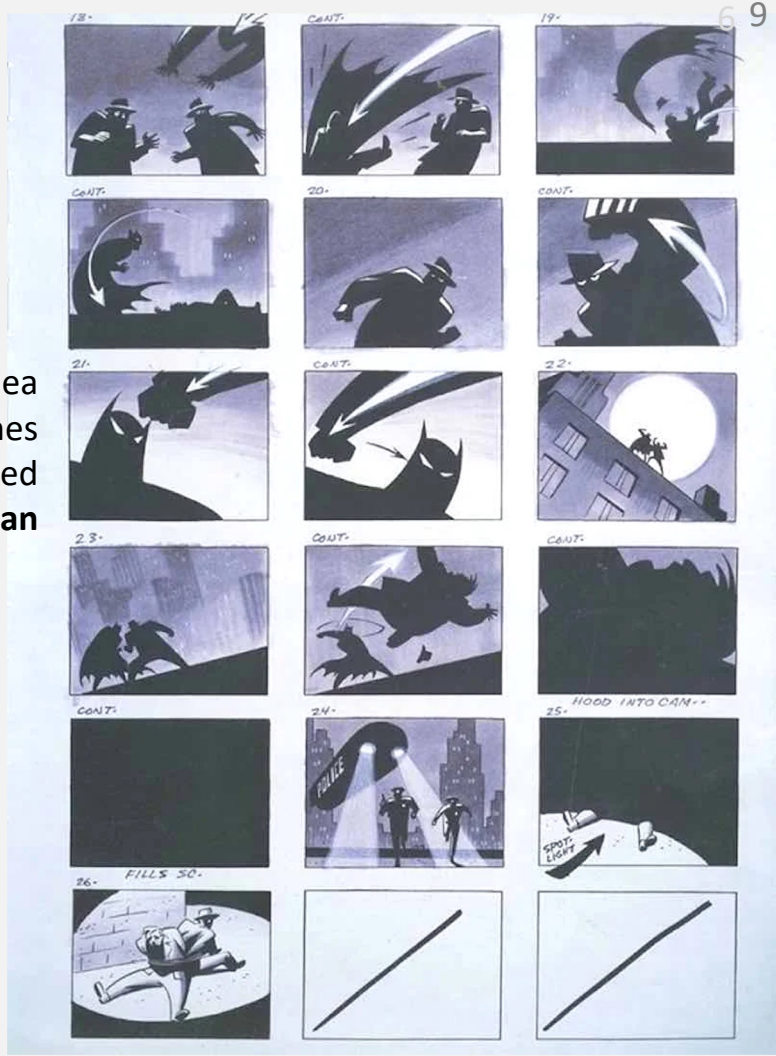



Story board Idea sketches for film Star Wars by the film director **George Lucas**

# Lets look at some idea-sketches for Storyboard for Animation Films:



Story board Idea sketches for the character of a **Baby**



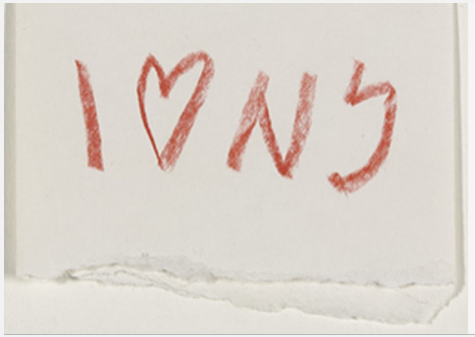

Storyboard Idea sketches for the animated movie **Batman**

# Lets look at some idea-sketches by Product Designers:

Doodle sketches and final design of Water Bottle by designer **Ross Lovegrove**

Rapid sketches and final design of Chairs by designer **Charles Eames**

# Lets look at some idea-sketches by Graphic Designers:



I ♥ NY

Idea Sketches and final design of ‘I love New York’ by Graphic Designer **Milton Glaser**

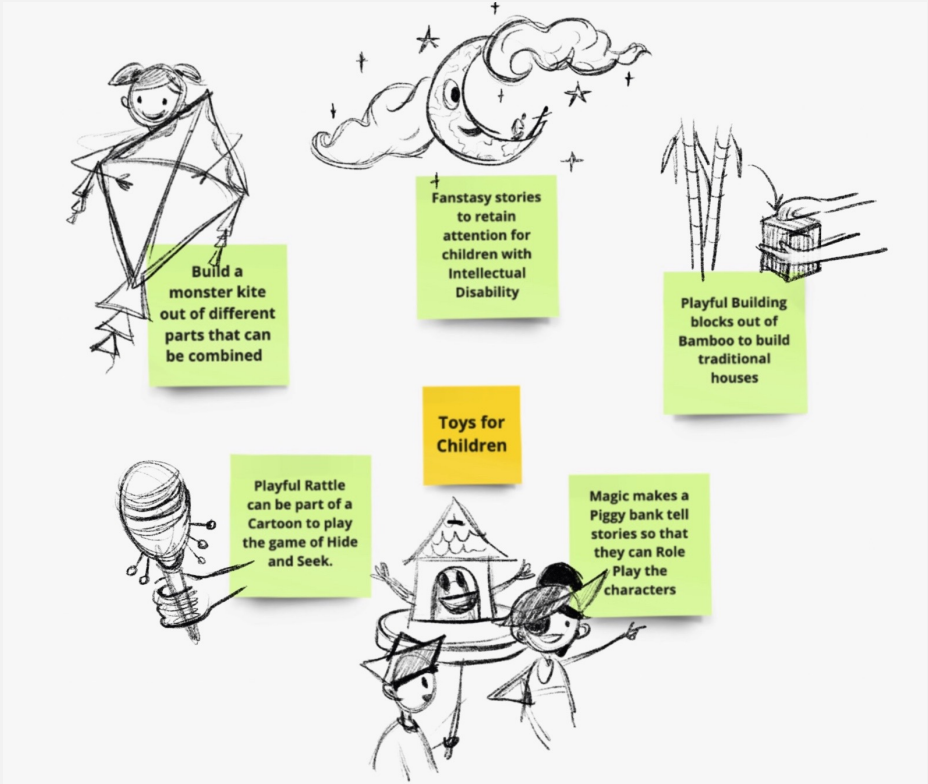
Idea sketches and final design of the logo for NEXT by Graphic Designer **Paul Rand**

# Example of Idea-Sketching for Ideation

The redefined statement for the problem is:

**Design an engaging 'Play and Learn' Constructive Toy for Children in the age group of 3 to 6 with features of Collaboration, Sharing and Storytelling using Sustainable Materials**

Shown here are the different idea-sketches created out of keywords from brain-storming



T9.3

# SCAMPER for Ideation

# How to use SCAMPER for Ideation?

SCAMPER is an acronym for seven creativity techniques suggested by Bob Eberle:

S = Substitute (with something else)

C = Combine (with another)

A = Adopt (for something else)

M = Modify (change something)

P = Put to another use

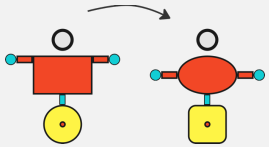
E = Eliminate (remove something)

R = Reverse (inverse or change direction)

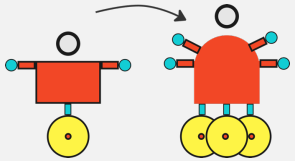
**SCAMPER** involves making use of these creativity techniques to further improve your idea-sketches

# 7 SCAMPER techniques:

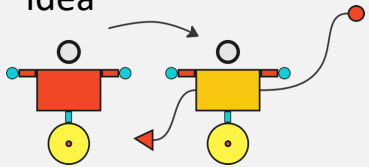
**S = Substitute**
Substitute the parts of an idea with another idea



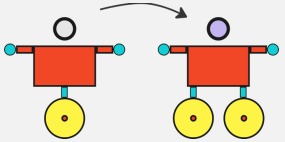
**C = Combine**
Combine an idea with another idea



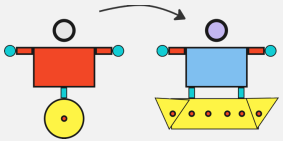
**A = Adapt**
Adapt feature/s of an idea from another idea



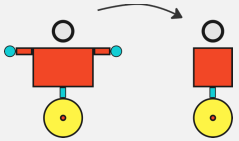
**M = Modify**
Modify an idea to make it better



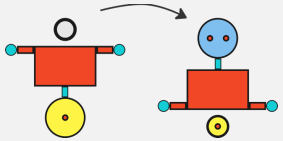
**P = Put to another use**
find another use or application for the idea



**E = Eliminate**
Eliminate parts of the idea to make it more efficient



**R = Reverse**
Reverse or inverse the idea



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T9.4

# Lateral Thinking

# How to use Lateral Thinking for Ideation?

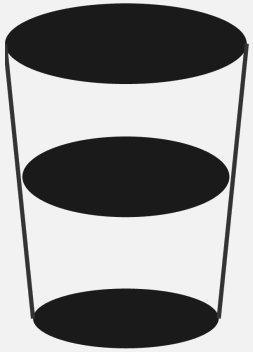
Edward de Bobo coined the word ‘Lateral Thinking’ as a way of creative thinking. He believed that Creativity Thinking Skills can be learnt and improved over a period of time.

**‘The need to be right all the time is the biggest bar to new ideas. It is better to have enough ideas for some of them to be wrong than to be always right by having no ideas at all’.**
*by Edward de Bobo*

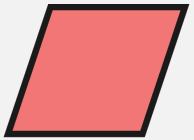
**‘Instead of linear or vertical thinking, which relies solely on logic, Lateral Thinking is a deliberate, systematic process of using your ability to think in a different way’.**
*by Edward de Bobo*

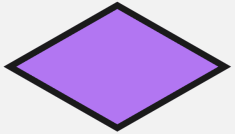
# Lateral Thinking for Ideation:

Edward de Bobo suggests that instead of digging the same hole deeper and wider to find a new solution, it is better to look for a new or different solution by digging unique holes in different locations.



Alternate Ideas Variations





# How many Ideas?

**How many Ideas:**

- The ground rule is at-least 3 different unique ideas

- 12 is a comfortable number of alternatives

- and more than 12 would be great

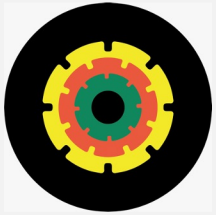
# Thanks for Listening

**DT&I Tools**
Section: T9
Week 9

# DT&I Course – Week 9:

## DT&I Process
(20%)

> Ideation
> Generating Creative Ideas



## DT&I Tools
(20%)

> Brainstorming
> Idea Sketching
> SCAMPER
> Lateral Thinking

## DT&I Project
(50%)

> Generate Creative Concepts and sketch these

## DT&I Cast Study
(10%)

> Case Study Project:
**GeoLights**
- Applied Photovoltaics Explorations

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## Supporting Organizations:

D’source

D’source Project

Open Design School

MoE’s Innovation Cell

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Prof. Ravi Poovaiah

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# Credits:

**Camera & Editing:**
Santosh Sonawane

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# Credits:

**Think Design Animation:**
Rajiv Sarkar

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**Graphic Icons:**
Shweta Pathare

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