Workshops Artifex

Gefinancierd door Erasmus+

How will a workshop be presented?

Scores on 7 STEM-goals

- Stimulate creativity
- Stimulate critical thinking
- Stimulate problem solving
- Stimulate groupwork

Scores on 7 STEM-goals

- Informal learning environment
- Technology use
- Stimulate entrepreneurship

Scores 1 to 5

Practicalities

Preparation: 2u

Duration: 2u

Material needs:

- Building platform with pole
- A fan with different speeds
- Building materials

(for more details see materials box on last pages)

Group size range: 26
Ideal sub-group size: 4

Workshop made for: 11-13
Easily transferable to workshops for ages between: 9-16

Environment FabLab necessary: No

Educational area:
* Engineering
* Mathematics
* Science
* Technology
* (Visual) Arts

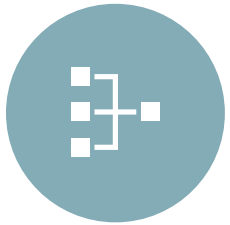
Preparation

Process

ORIENTATION

DESIGN

MAKE



OPERATION

EVALUATION

Pedagogical tips

Content links

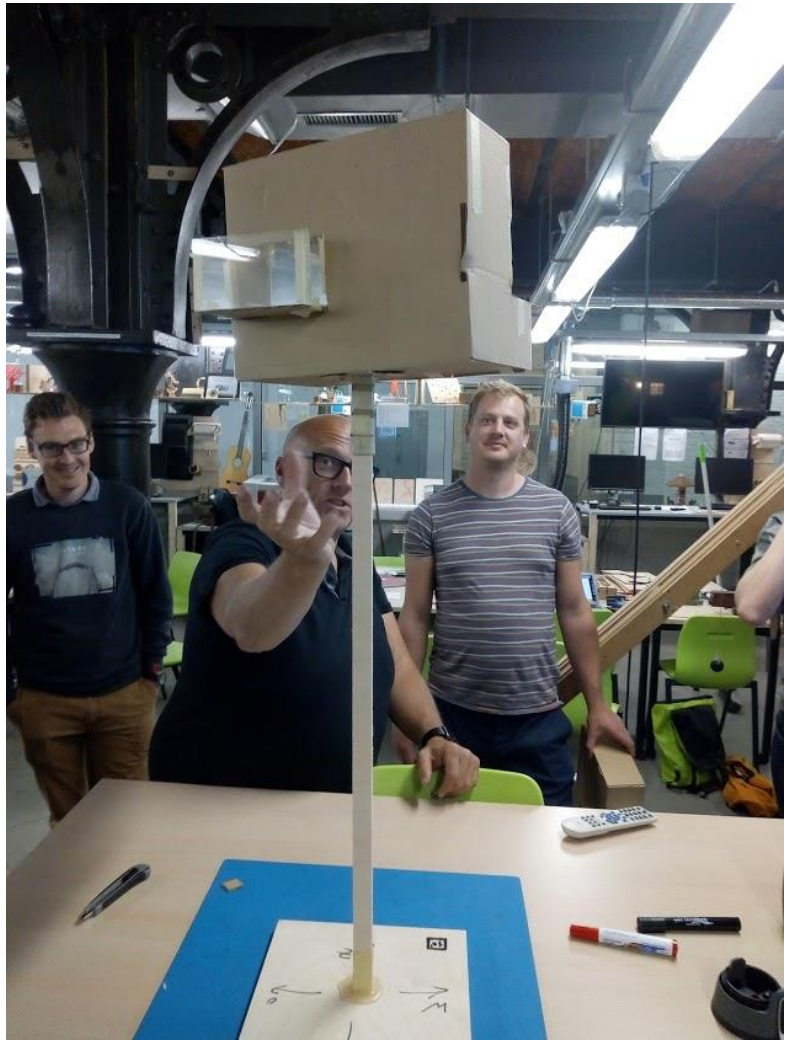
Not in FabLab?

Our house

Focus: Problem solving

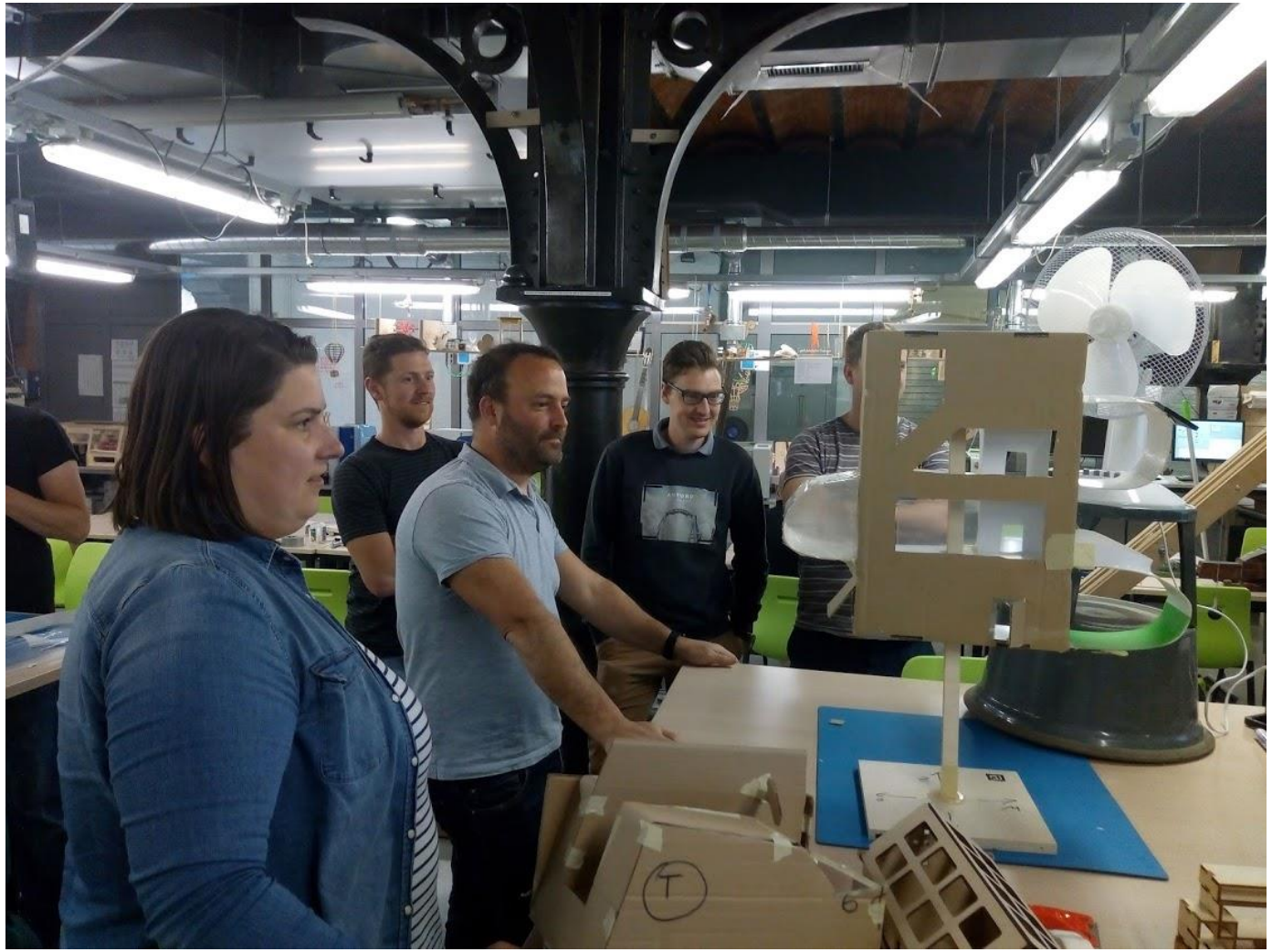
Problem 1: House

Problem 2: Soil

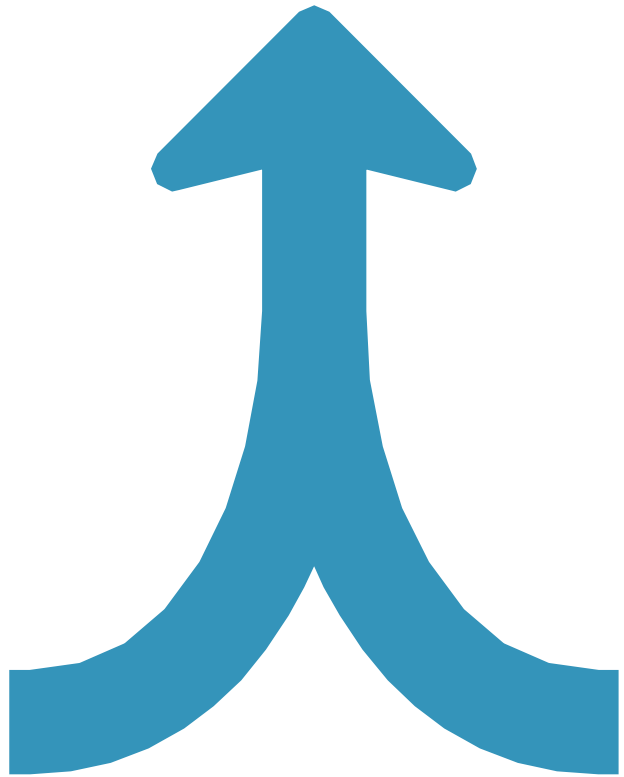


Problem 3: Wind

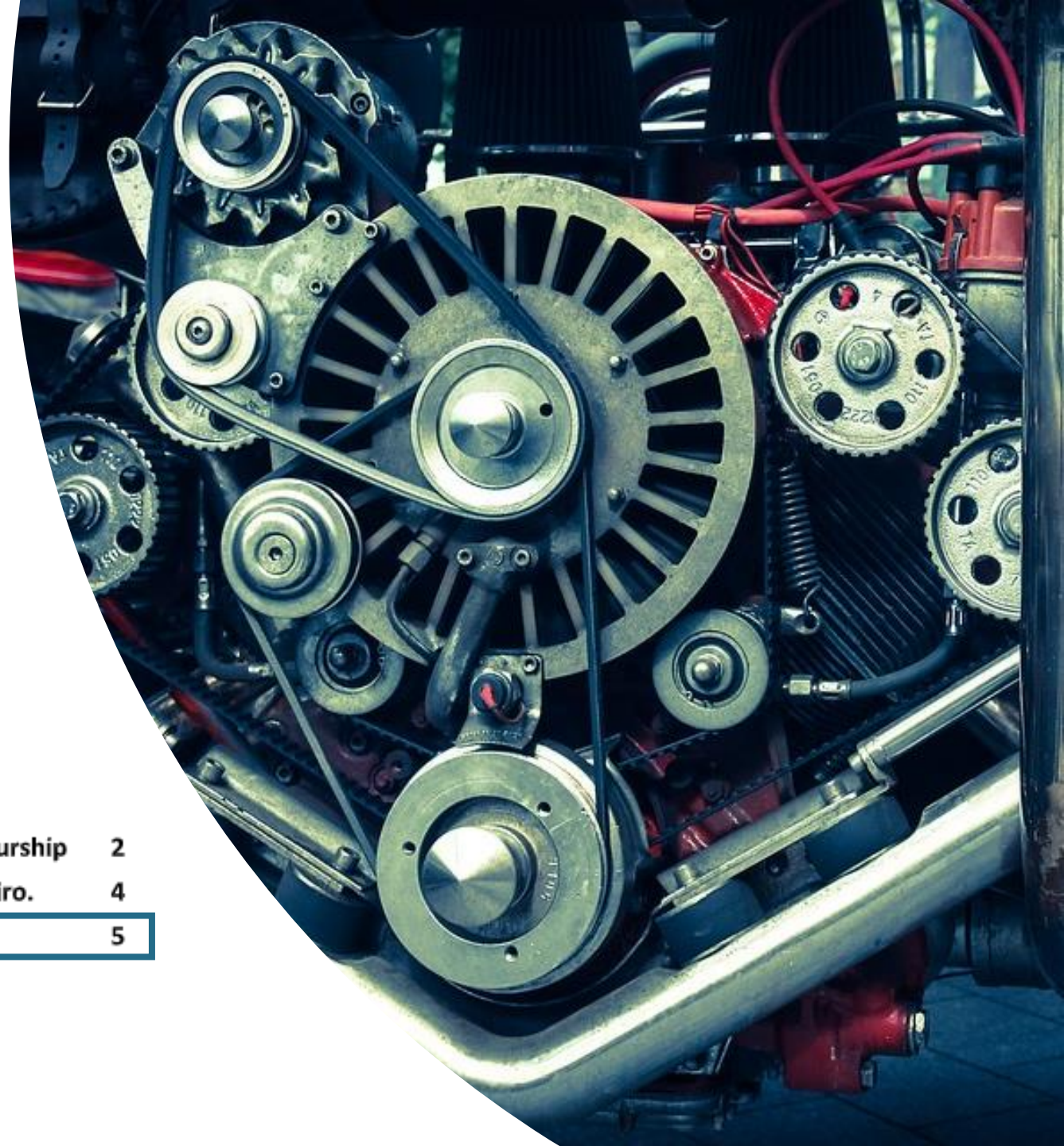
Problem 4: Light



Variations



Technical



Stimulate problem solving	4
Stimulate creativity	3
Stimulate critical thinking	2
Stimulate group work	4

Stimulate entrepreneurship	2
Informal learning enviro.	4
Technology use	5

Entrepreneurship

Stimulate problem solving	4
Stimulate creativity	3
Stimulate critical thinking	2
Stimulate group work	4

Stimulate entrepreneurship	4
Informal learning enviro.	2
Technology use	2

Short version

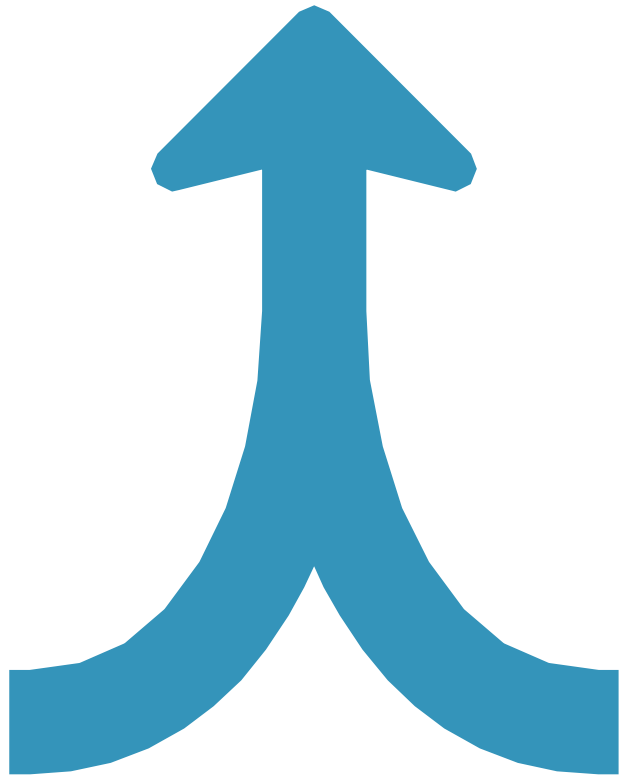
Stimulate problem solving	4
Stimulate creativity	3
Stimulate critical thinking	2
Stimulate group work	4

Stimulate entrepreneurship	2
Informal learning enviro.	4
Technology use	2

Pinball

Focus: Design

Variations

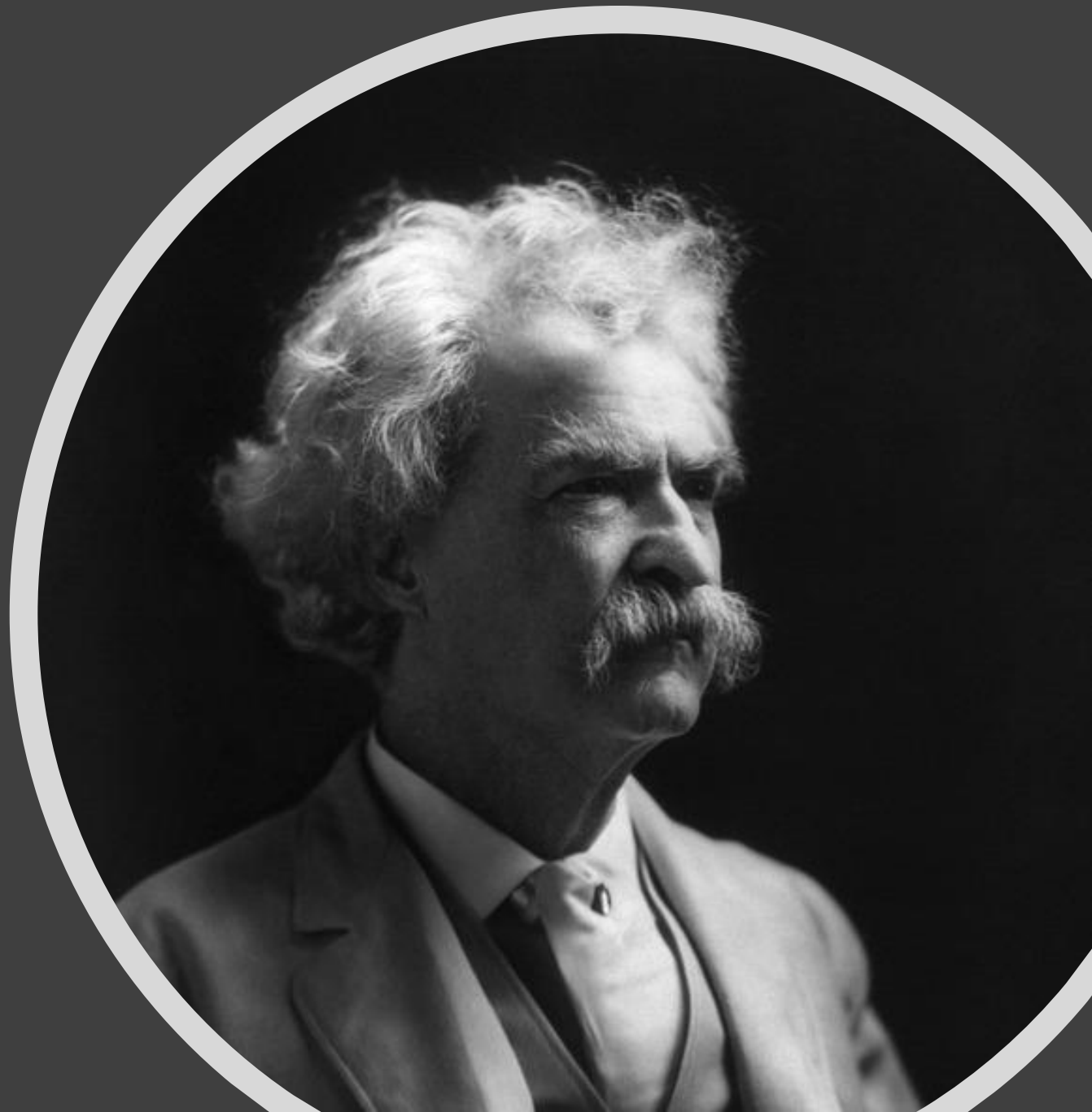


Creativiy

Stimulate problem solving	5	Stimulate entrepreneurship	4
Stimulate creativity	5	Informal learning enviro.	3
Stimulate critical thinking	4	Technology use	3
Stimulate group work	5		

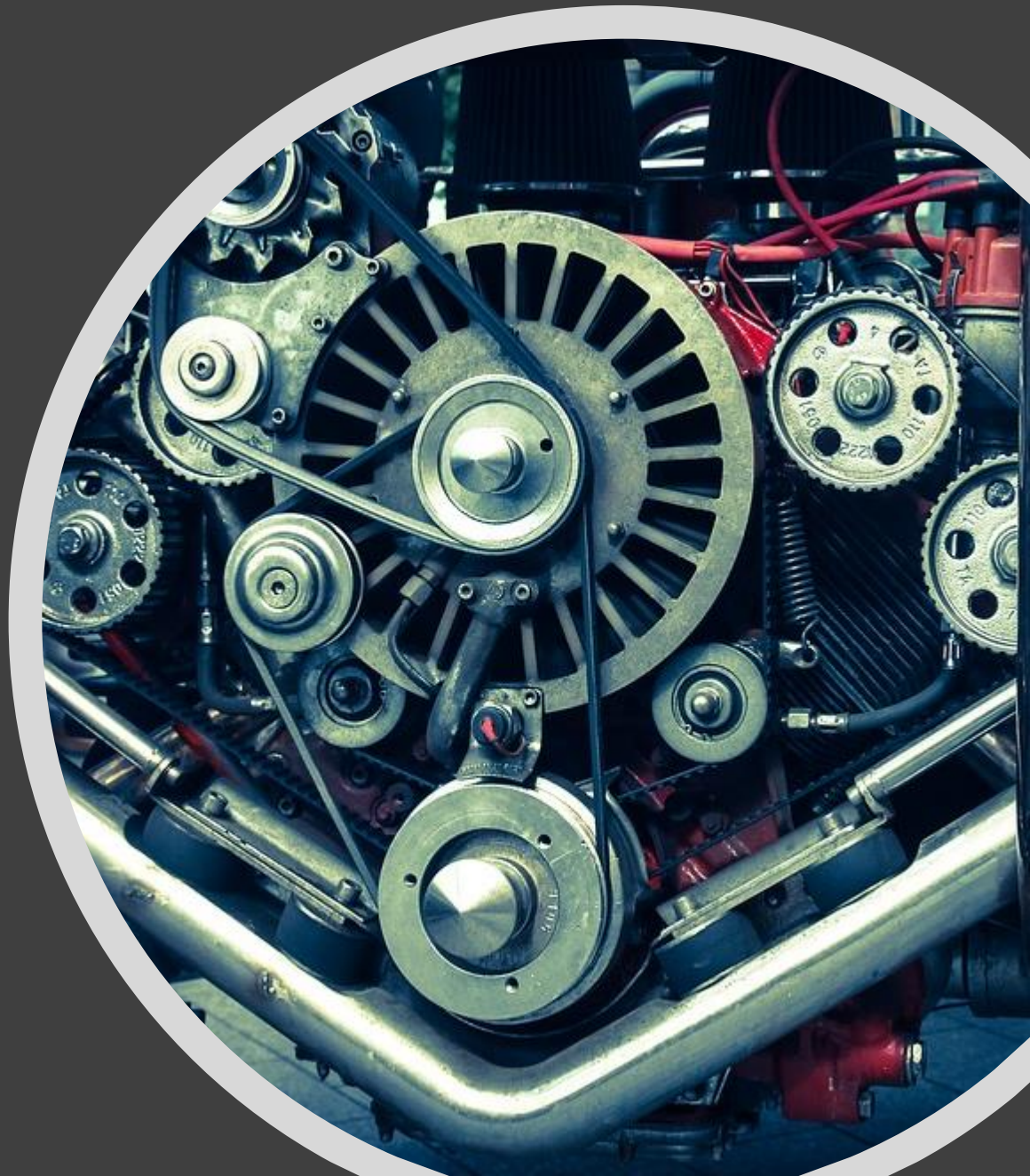
Critical thinking

Stimulate problem solving	5	Stimulate entrepreneurship	4
Stimulate creativity	3	Informal learning enviro.	3
Stimulate critical thinking	5	Technology use	1
Stimulate group work	5		



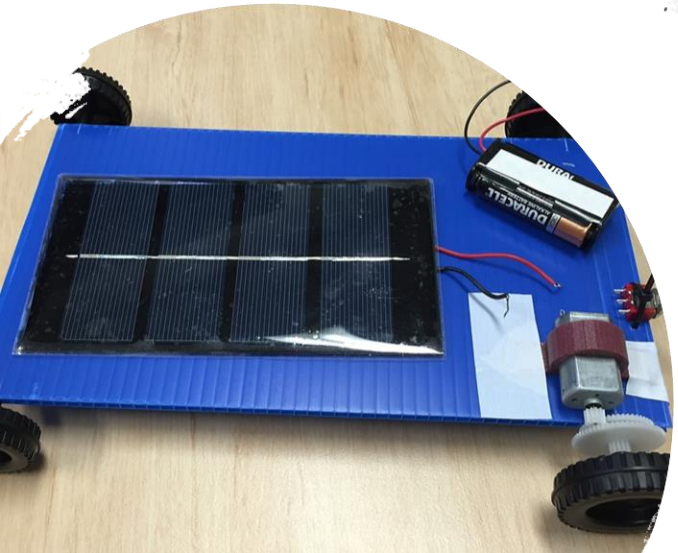
Technical

Stimulate problem solving	5	Stimulate entrepreneurship	1
Stimulate creativity	3	Informal learning enviro.	2
Stimulate critical thinking	4	Technology use	5
Stimulate group work	5		



Problem solving

Stimulate problem solving	5	Stimulate entrepreneurship	1
Stimulate creativity	3	Informal learning enviro.	3
Stimulate critical thinking	4	Technology use	1
Stimulate group work	5		

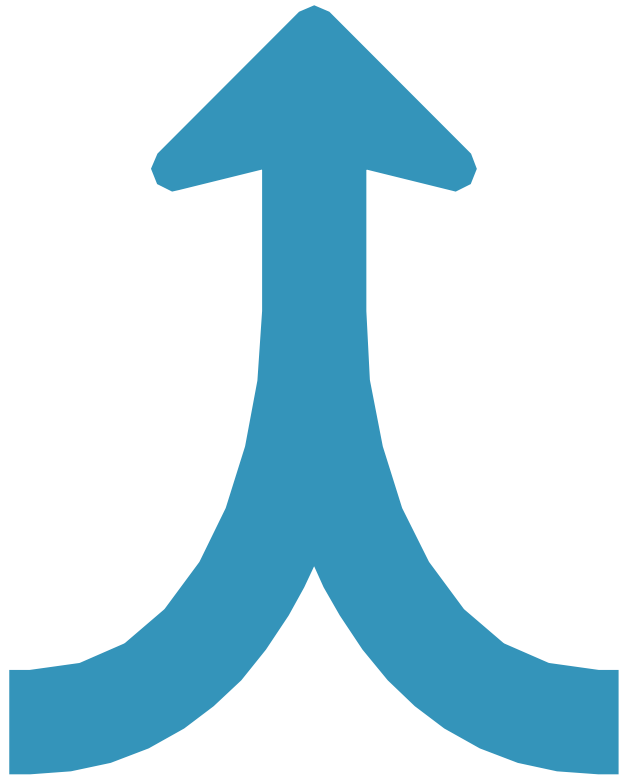


Solar Cars

Focus: Problem solving

CO TECH
MAKERSPACE

Variations



Basic

Mount straws/tubes with flowersticks/rods. Make one rod a little longer so the pulley can be fitted.

he pulley

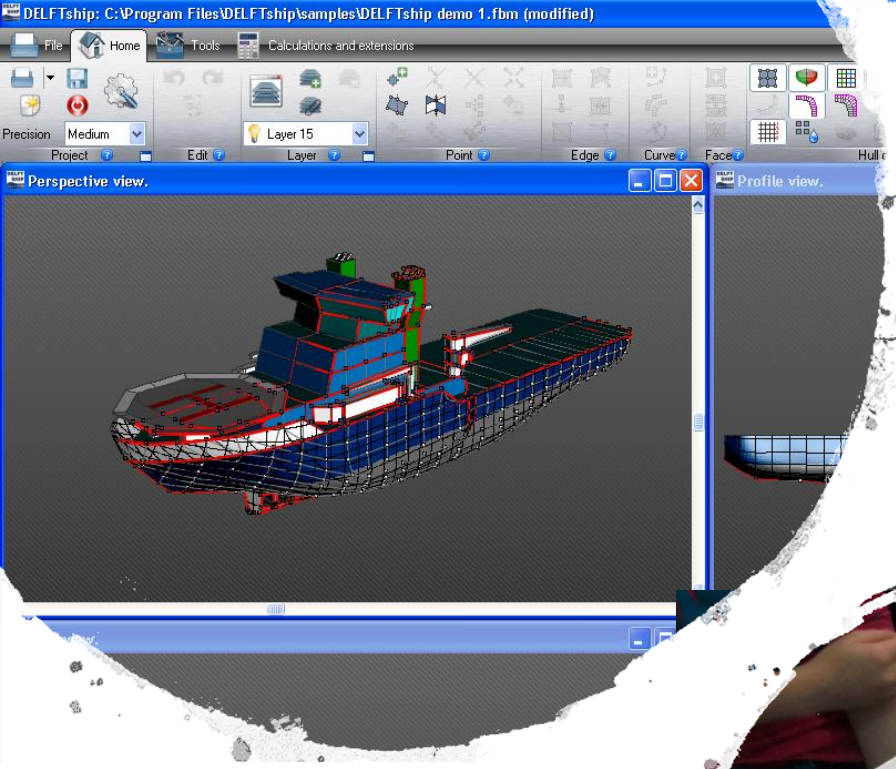
Stimulate problem solving	3	Stimulate entrepreneurship	2
Stimulate creativity	3	Informal learning enviro.	3
Stimulate critical thinking	2	Technology use	3
Stimulate group work	4		

Intermediate

Stimulate problem solving	5	Stimulate entrepreneurship	4
Stimulate creativity	4	Informal learning enviro.	3
Stimulate critical thinking	4	Technology use	3
Stimulate group work	4		

Advanced

Stimulate problem solving	5	Stimulate entrepreneurship	5
Stimulate creativity	4	Informal learning enviro.	3
Stimulate critical thinking	5	Technology use	3
Stimulate group work	5		



Ship Design

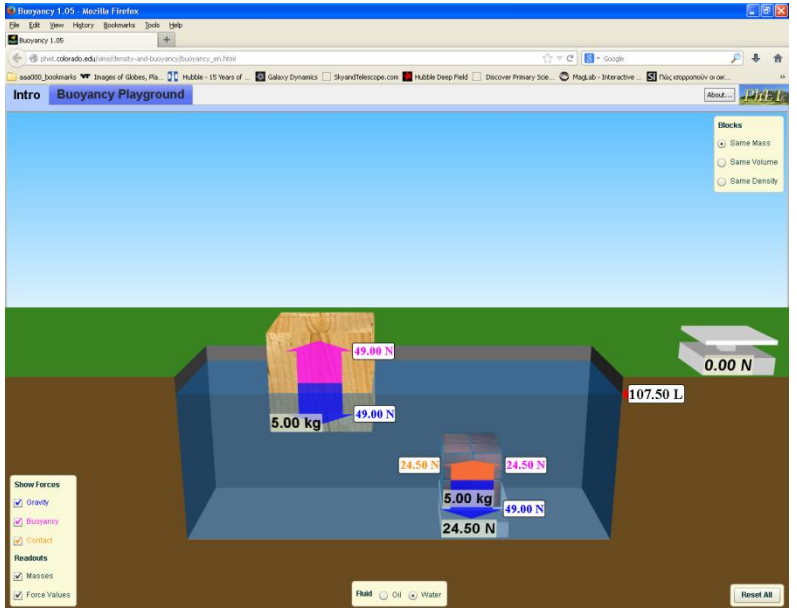
Focus: Design Process and Problem Solving

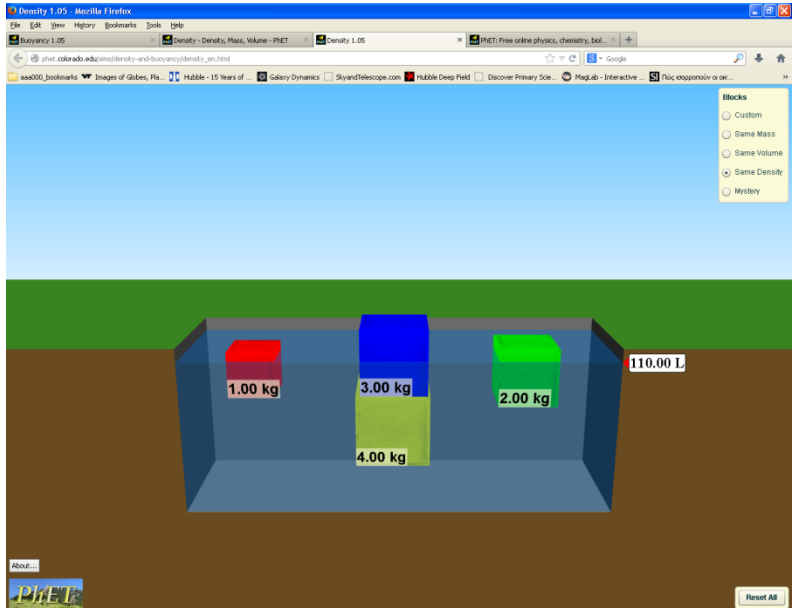
Georgios Mavromanolakis
R&D, Ellinogermaniki Agogi,
Greece

1: Understand buoyancy

water tank

dynamometers





Building materials

Low cost materials provided per team

2: Understand constraints (properties of materials)

skewers

drinking straws

plastic forks

aluminum foil

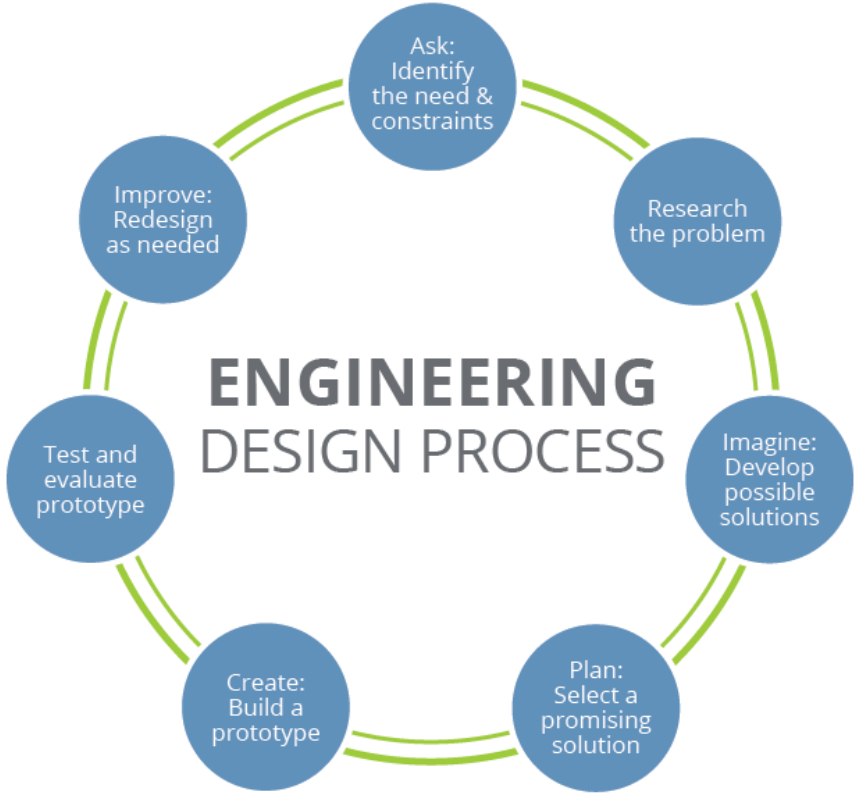
baking paper

wrapping film

Students, split into teams of 4 or 5, are assigned/**challenged** to build a **water-tight, strong, stable, streamlined** vessel, to carry a payload using only certain materials

3:
From theory to practice

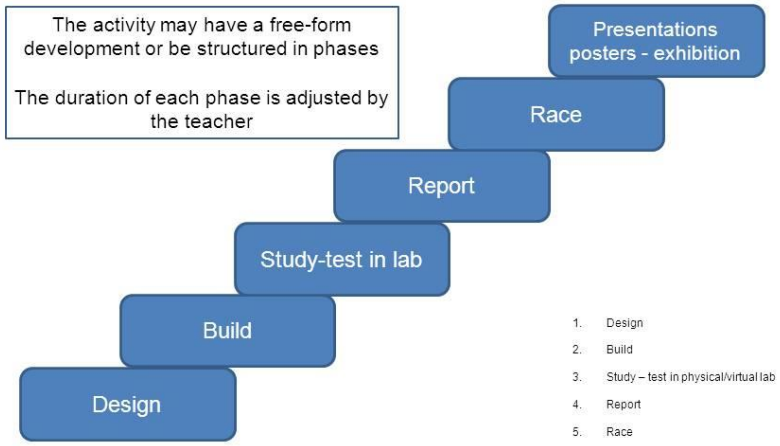
4: Implement a Process



Phases of the activity

The activity may have a free-form development or be structured in phases

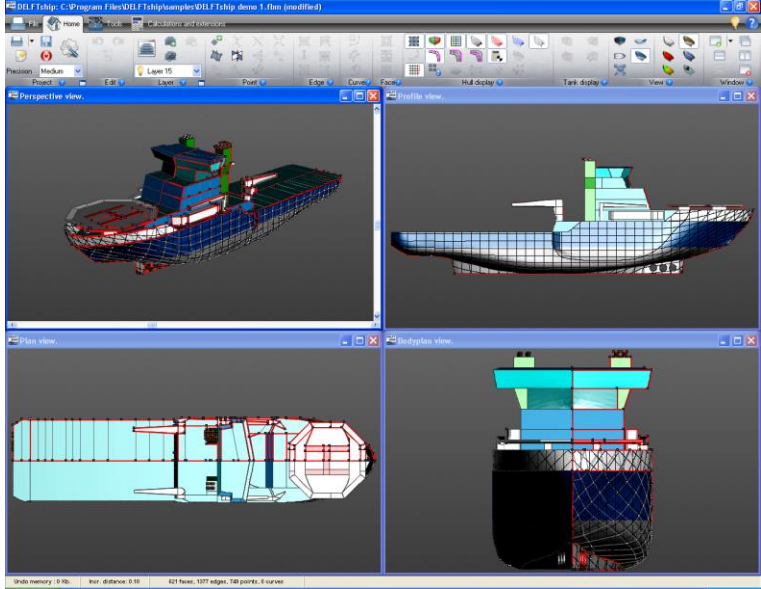
The duration of each phase is adjusted by the teacher



1. Design
2. Build
3. Study – test in physical/virtual lab
4. Report
5. Race
6. Presentations – posters

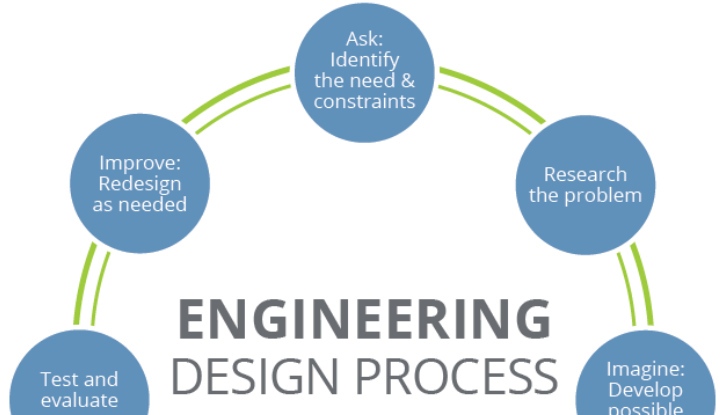
Variaties

- Focus on Design

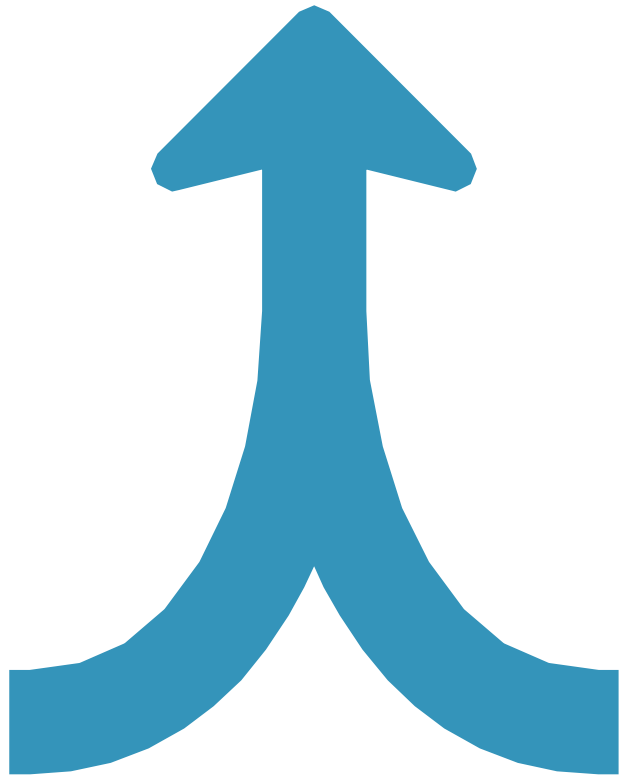


- Focus on Problem-solving and Collaborative Work-under-pressure

- Focus on Iterative Process



Variations



Basic

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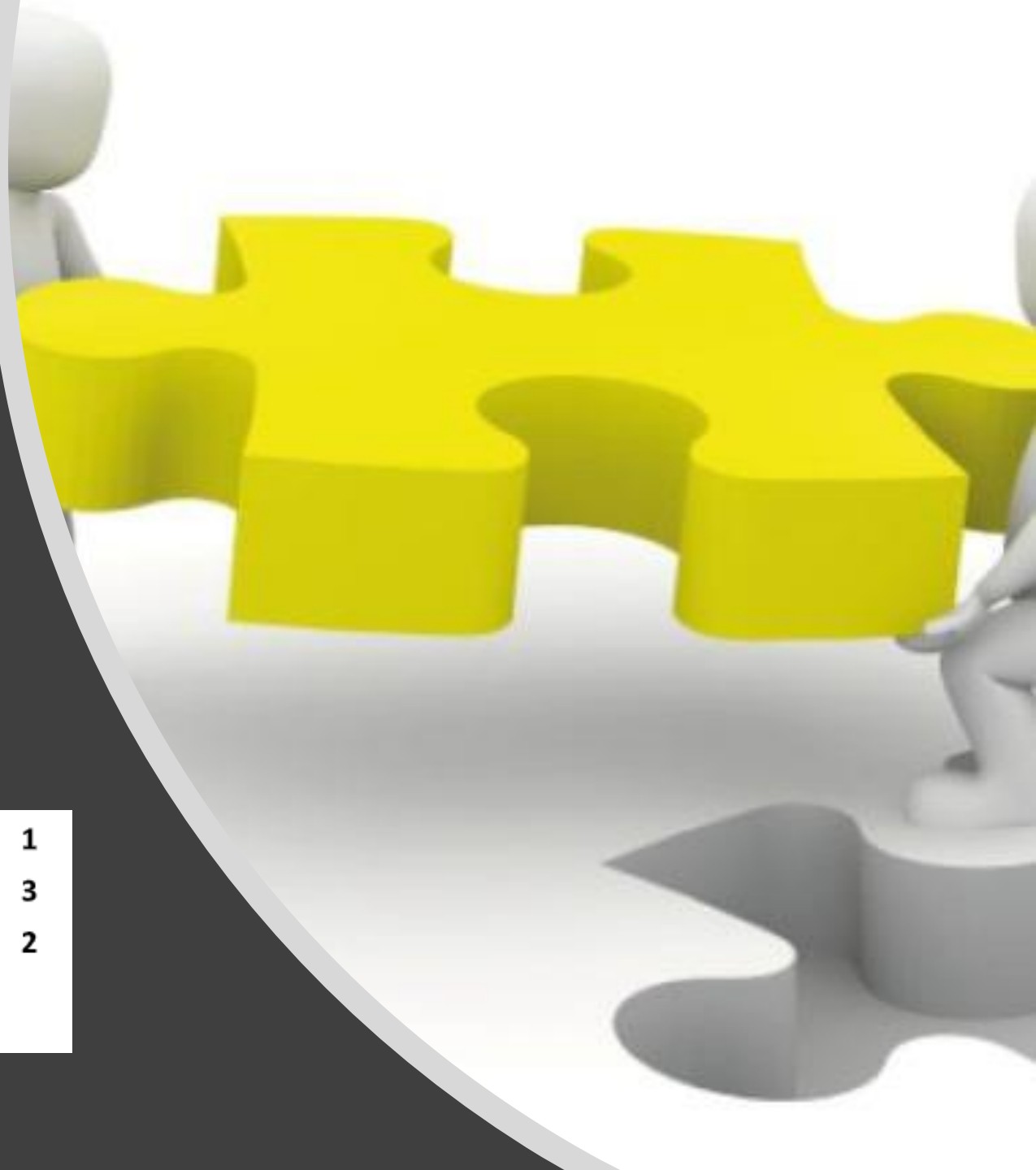
Stimulate creativity	4	Informal learning enviro.	3
Stimulate critical thinking	4	Technology use	2
Stimulate group work	3		



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Advanced

Stimulate problem solving	5	Stimulate entrepreneurship	1
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Stimulate group work	5		