



# NASA Genius Test (divergent thinking)

3-5 years

98%

8-10 years

32%

13-15 years

10%

Adult

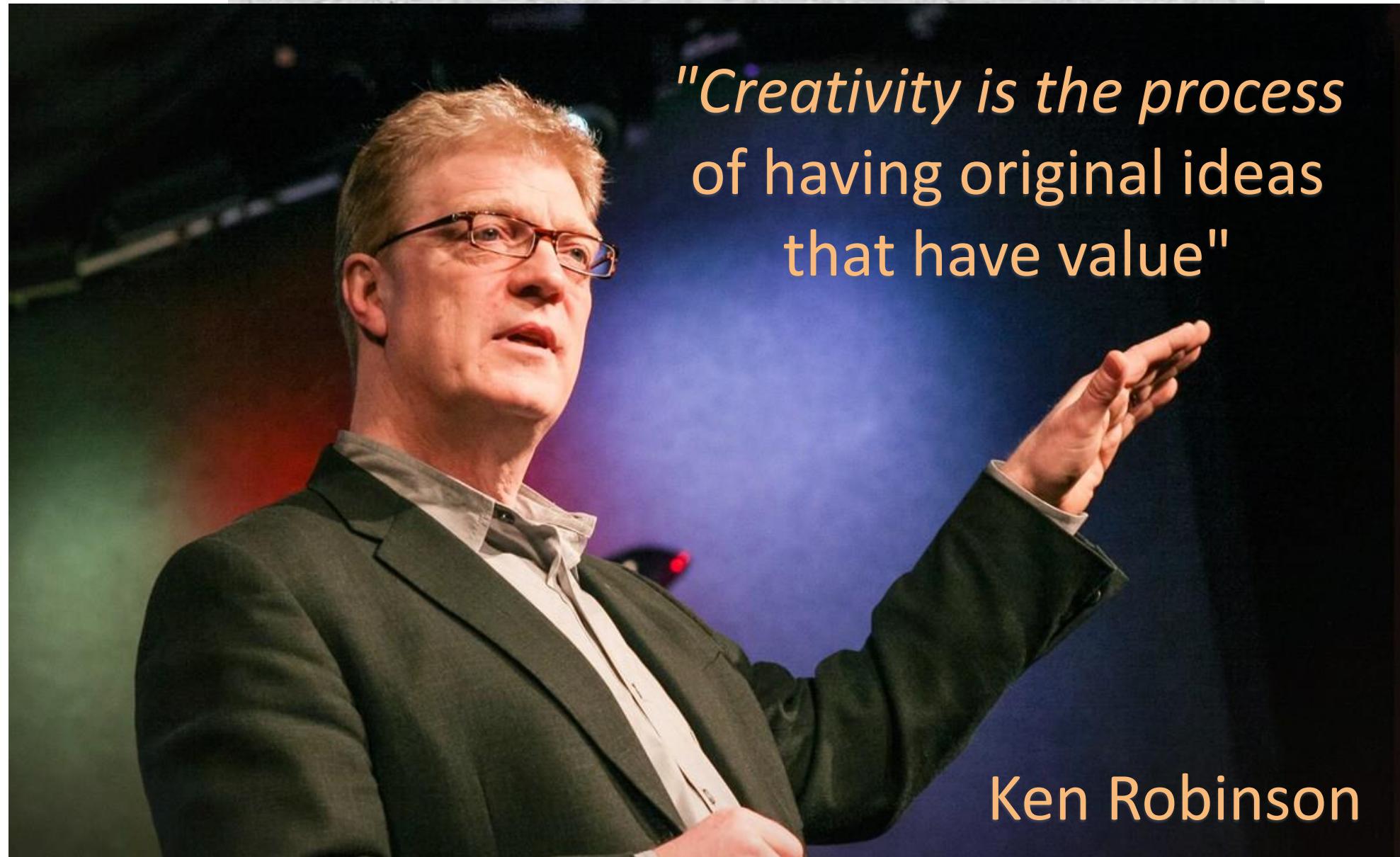
2%



# Agenda

- Creativity
- Measure your own creativity level
- The process of solving problems  
in a creative way

# What is creativity?



*"Creativity is the process  
of having original ideas  
that have value"*

Ken Robinson

# What is an idea?

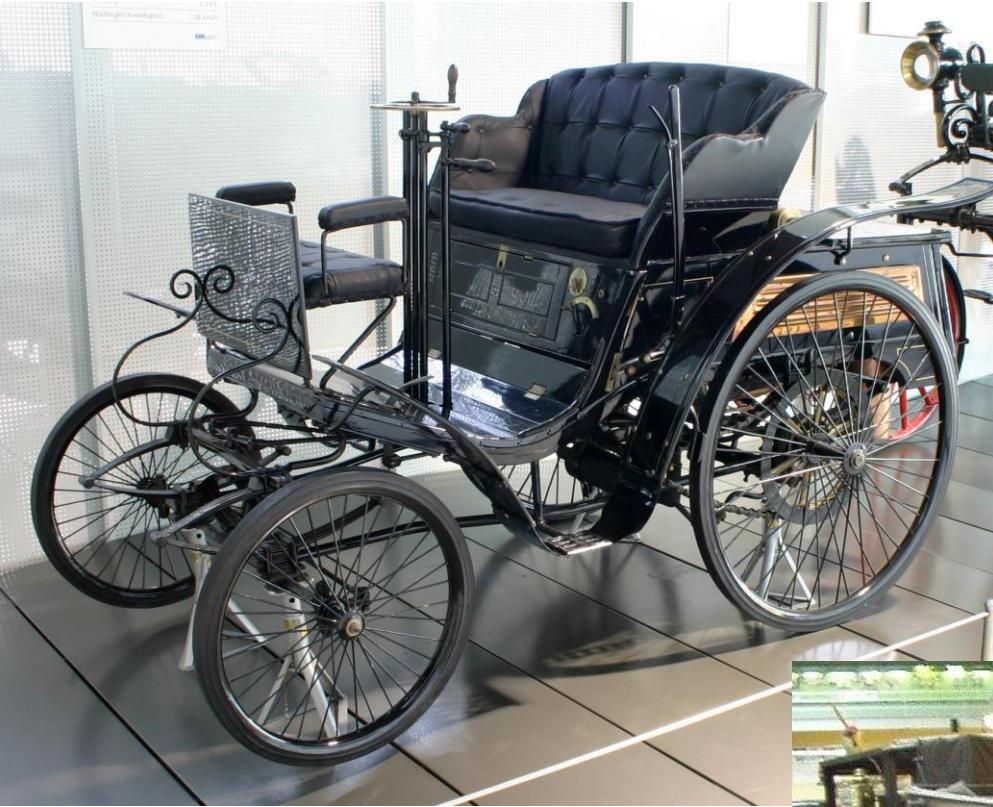
*"... the triumph of association"*

Robert Frost

*"An idea is nothing more nor less than a new combination of old elements"*

James Webb Young





**creativity**  
is a kind of  
**WORK**

# Can we measure creativity?



Use circles as  
a prompt for drawing!

Draw for 2 minutes

# Creativity Indicators

- **Fluency**
  - Producing many original ideas easily
- **Elaboration**
  - Enhance ideas by providing more details
- **Flexibility**
  - Coming up with many different kinds of ideas
- **Originality**
  - Production of ideas that are unique or unusual

Use the circles as a prompt for drawing. Draw for two minutes.

---

Anna



face



face



face



face



face

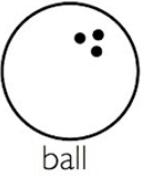
Benji



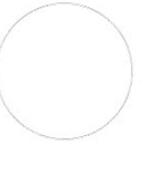
face



wheel



ball



Carol



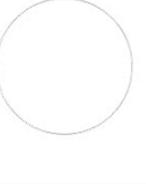
wheel



wheel



ball



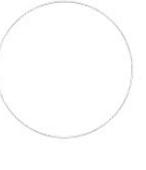
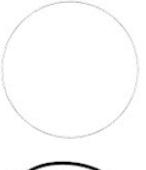
Darlene



bomb



balloon



Eric



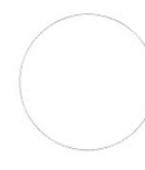
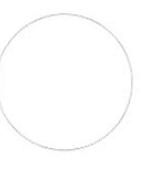
face



face



face



# Other Creativity Tests

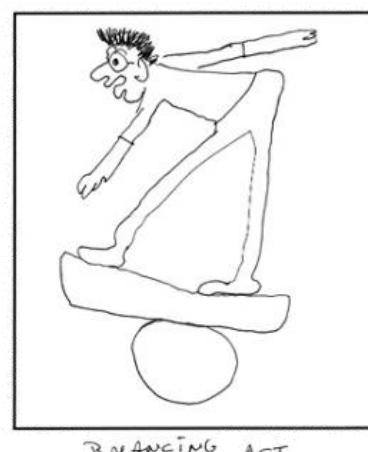
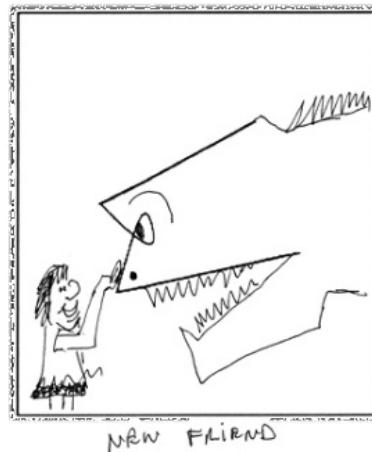
- You have two minutes...
  - *How many uses can you think of for a paper clip?*
  - *Enumerate all transparent objects.*
  - How many similarities do you see between the following two objects?

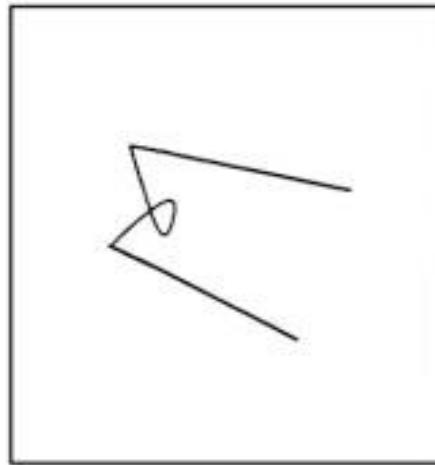


# Other Creativity Tests

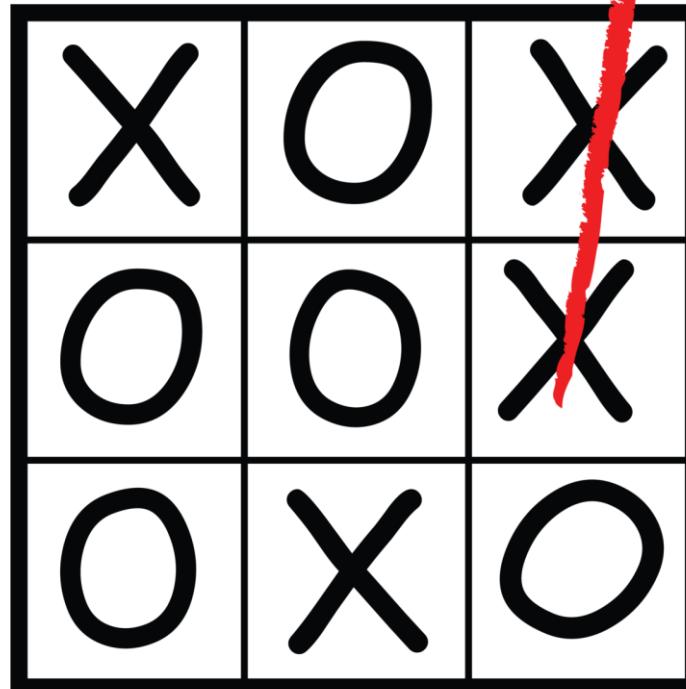
- You have three minutes...
  - What would happen if the sun disappears?
  - You're given a shape like the below, and then asked to complete the image

Are they  
elaborate?



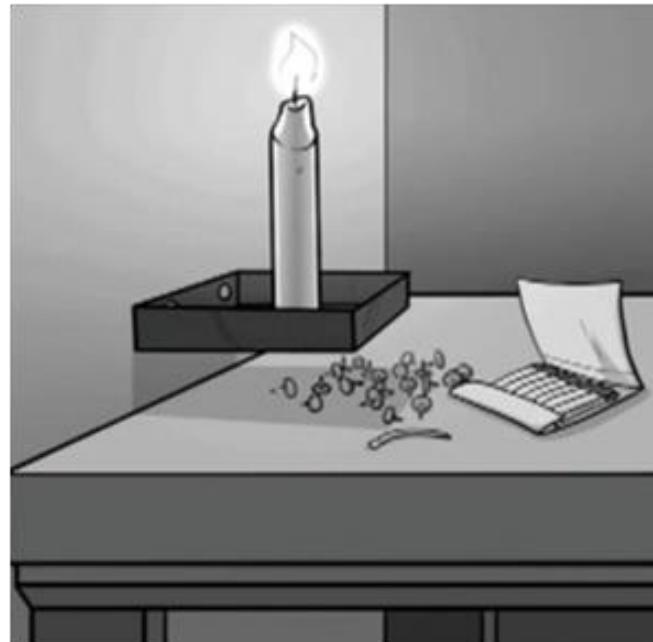


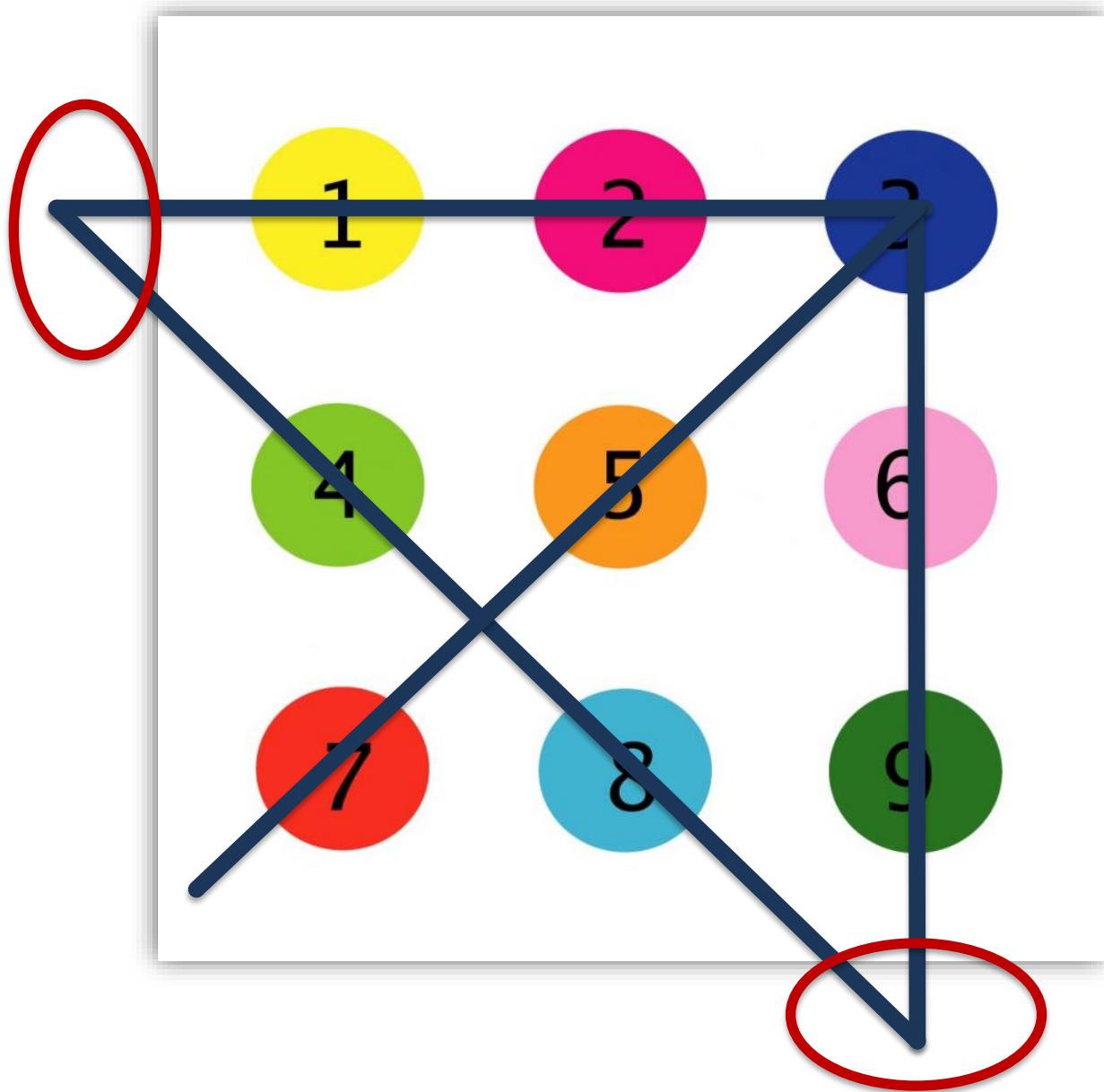
**THINK  
OUTSIDE  
THE BOX**

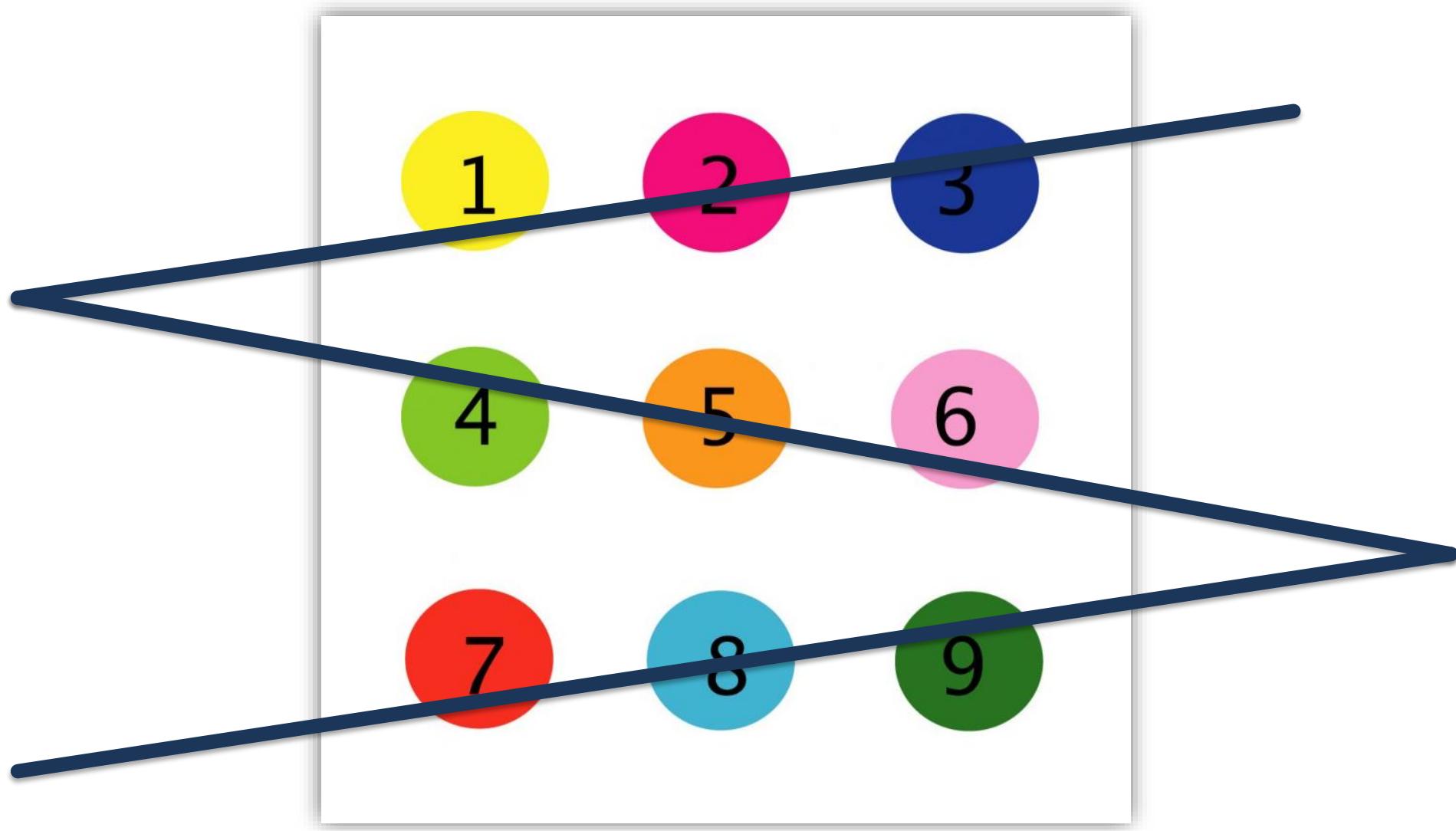


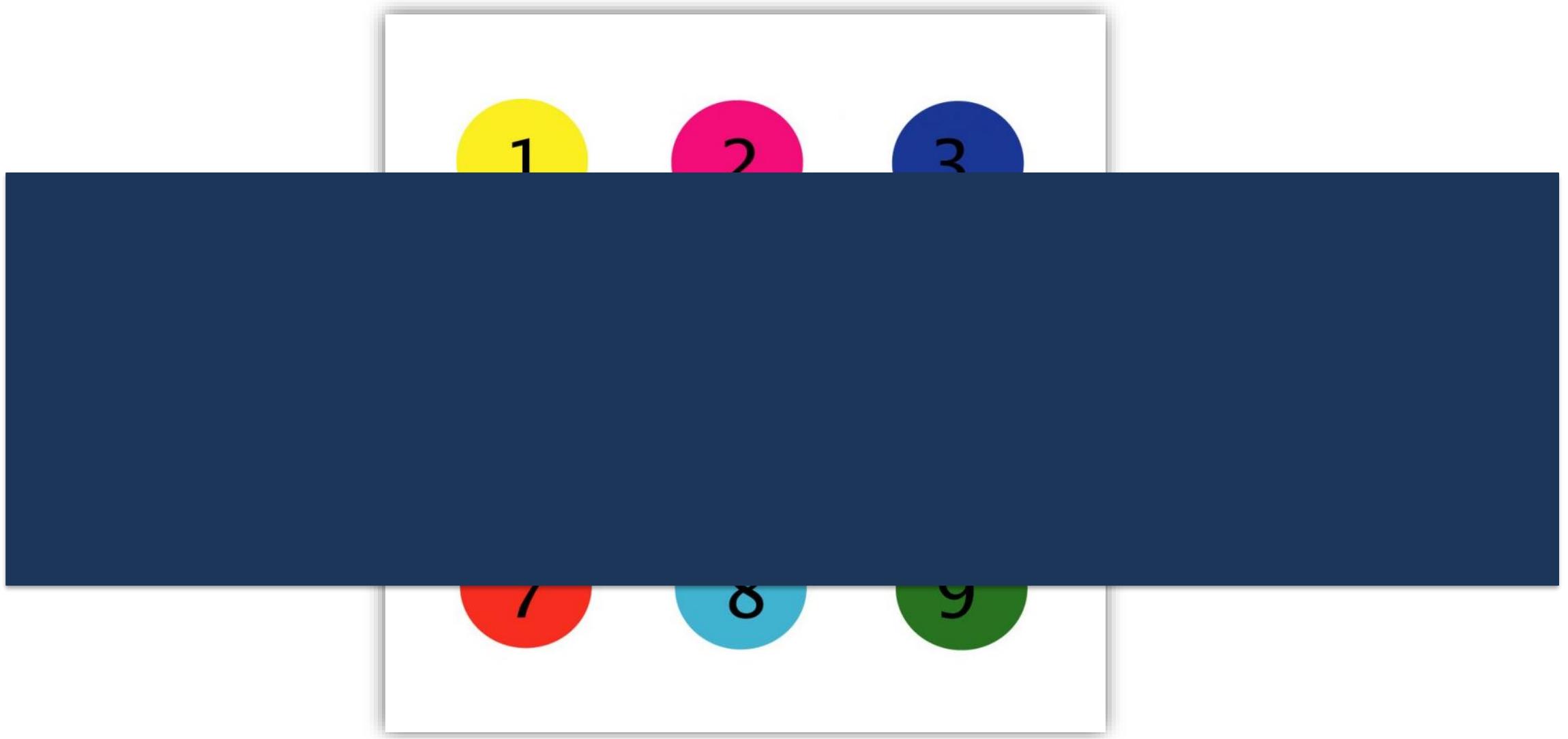
# Other Creativity Tests

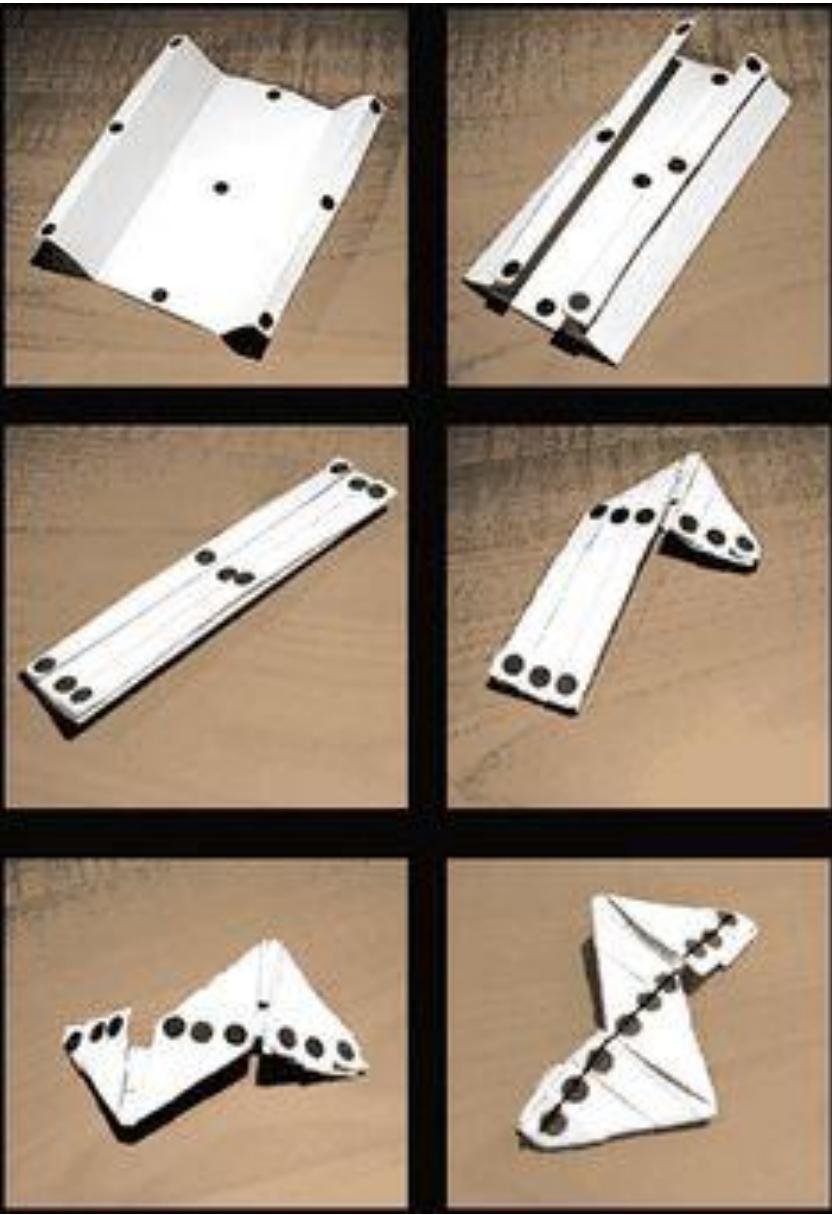
## Candle problem

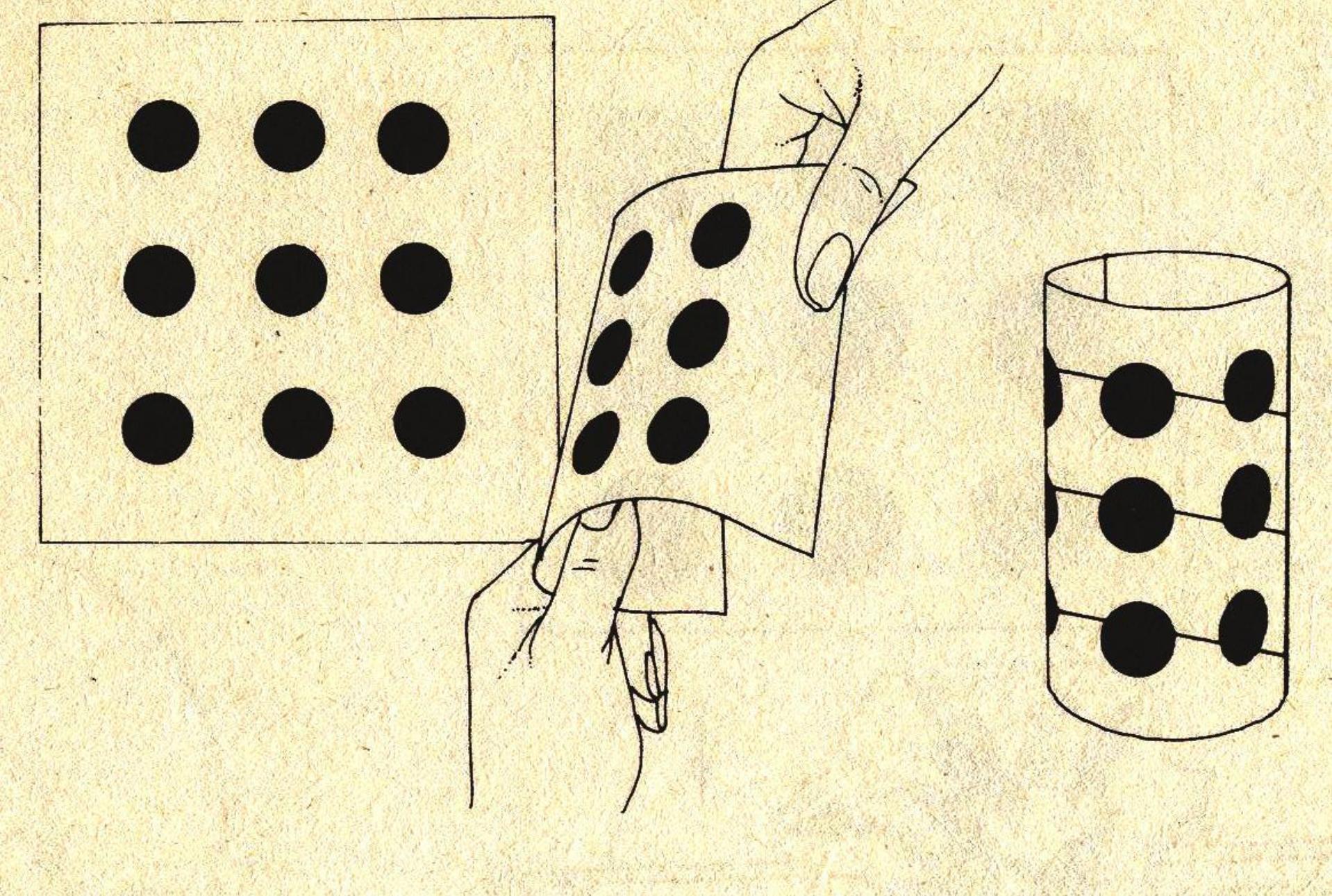


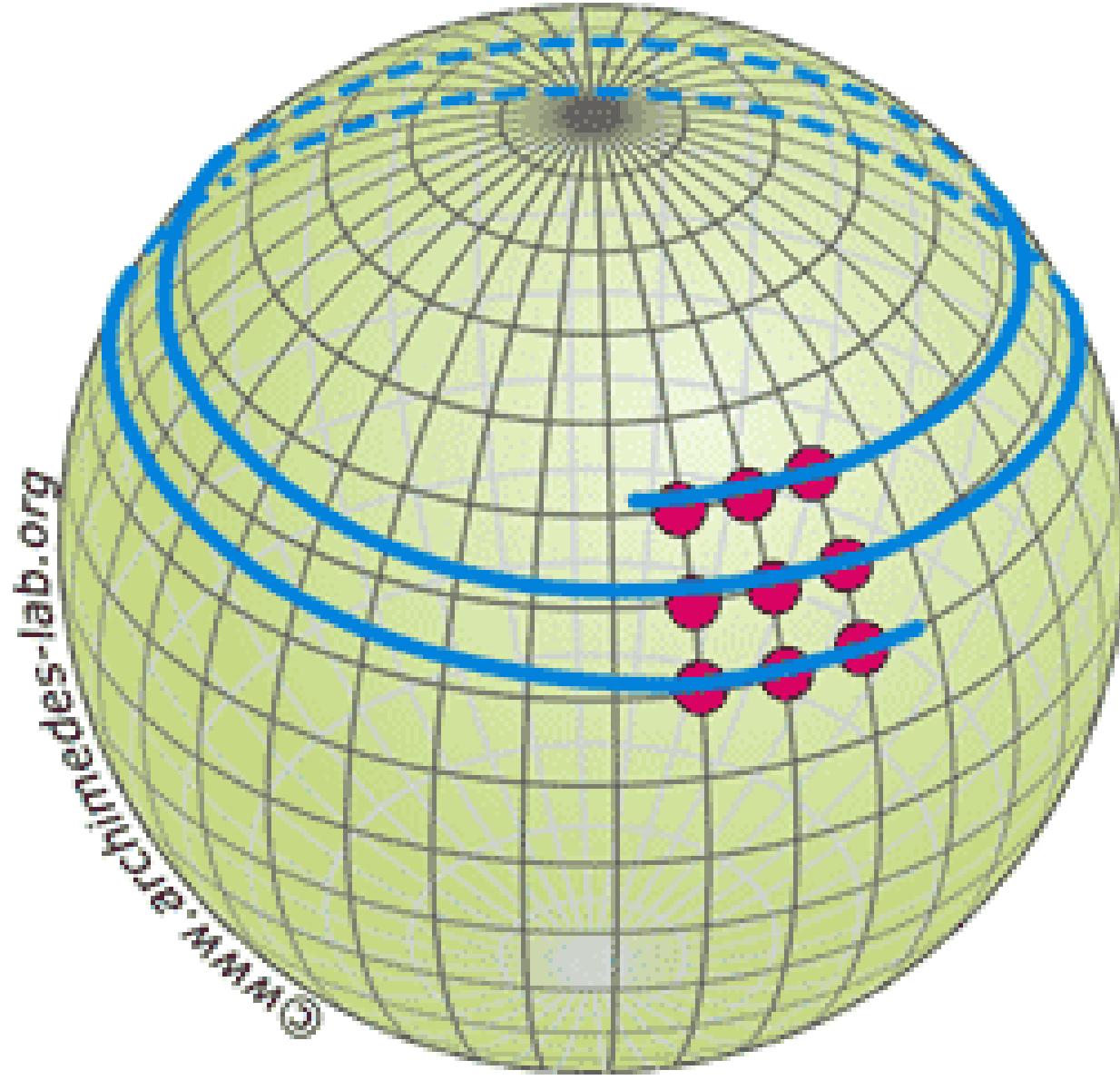










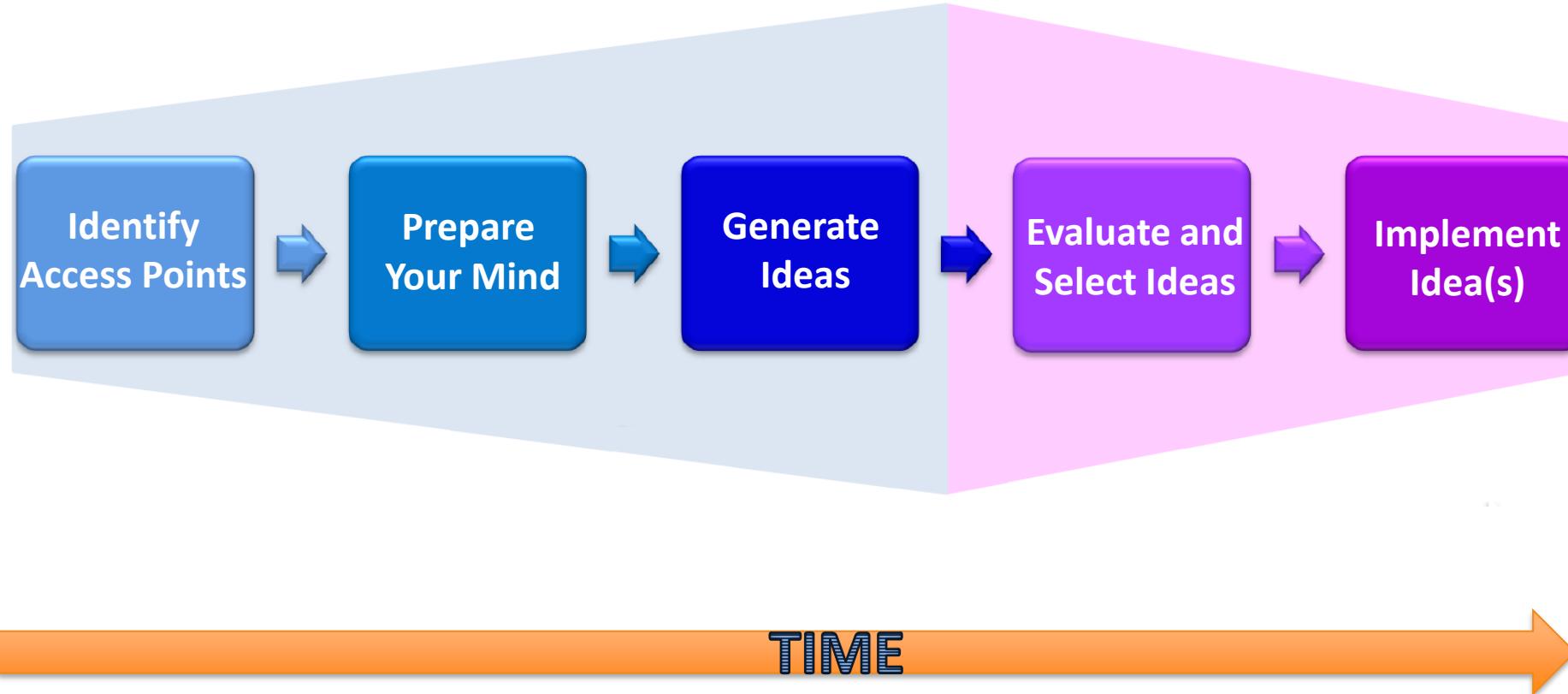


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A QUICK JUMP  
OUT OF THE BOX  
IS MORE INSIGHTFUL THAN  
A LIFETIME OF  
STANDARD THINKING

Giovanni E. Corazza

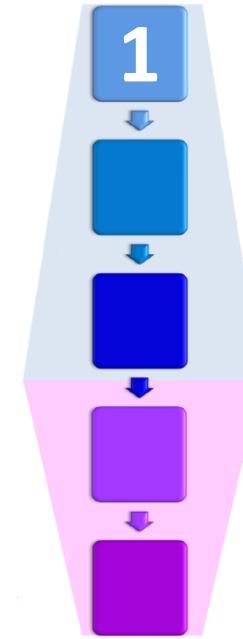
# Process of creative problem solving



# Identify Access Points

## *Objective*

Identify many access points to solve the problem



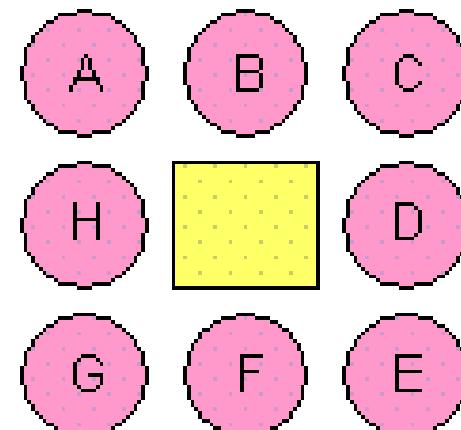
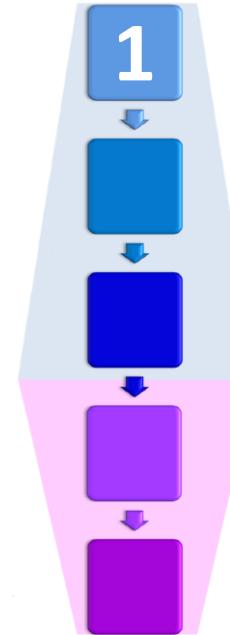
## *Technique*

Lotus Blossom Diagram

# Identify Access Points

## *Lotus Blossom Technique*

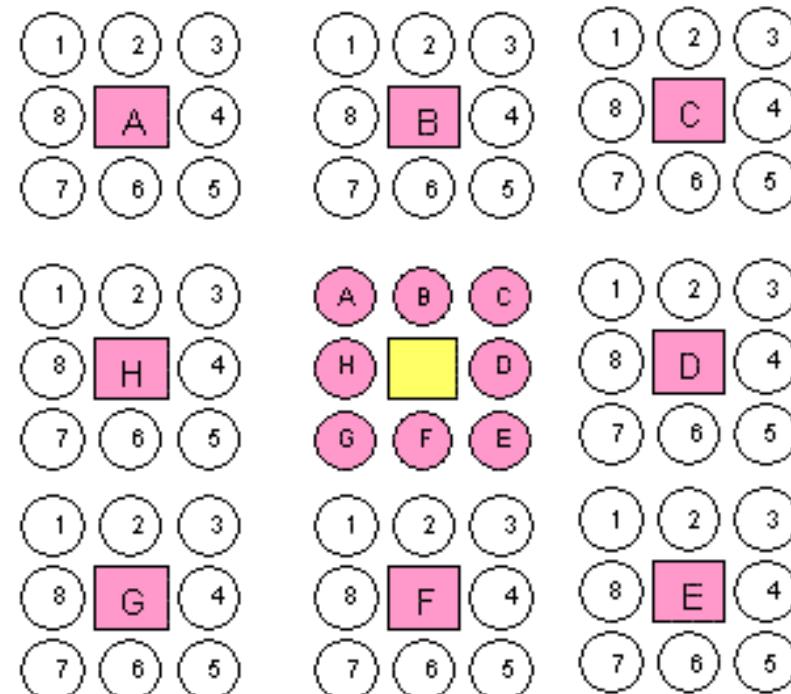
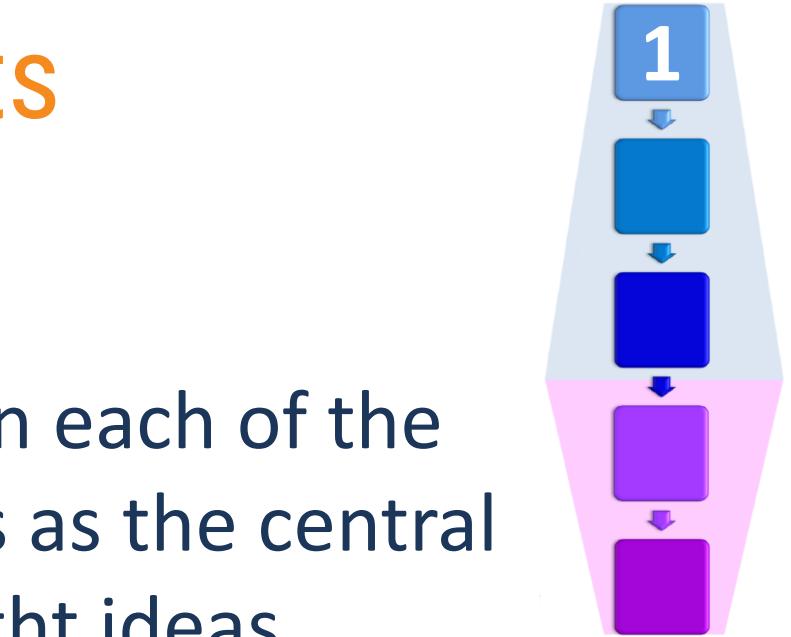
1. Write your central theme / problem in the center square
2. Think of 8 related ideas or applications (access points)
3. Write ideas in the surrounding circles (A-H)



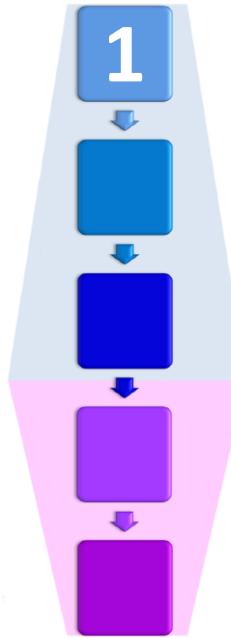
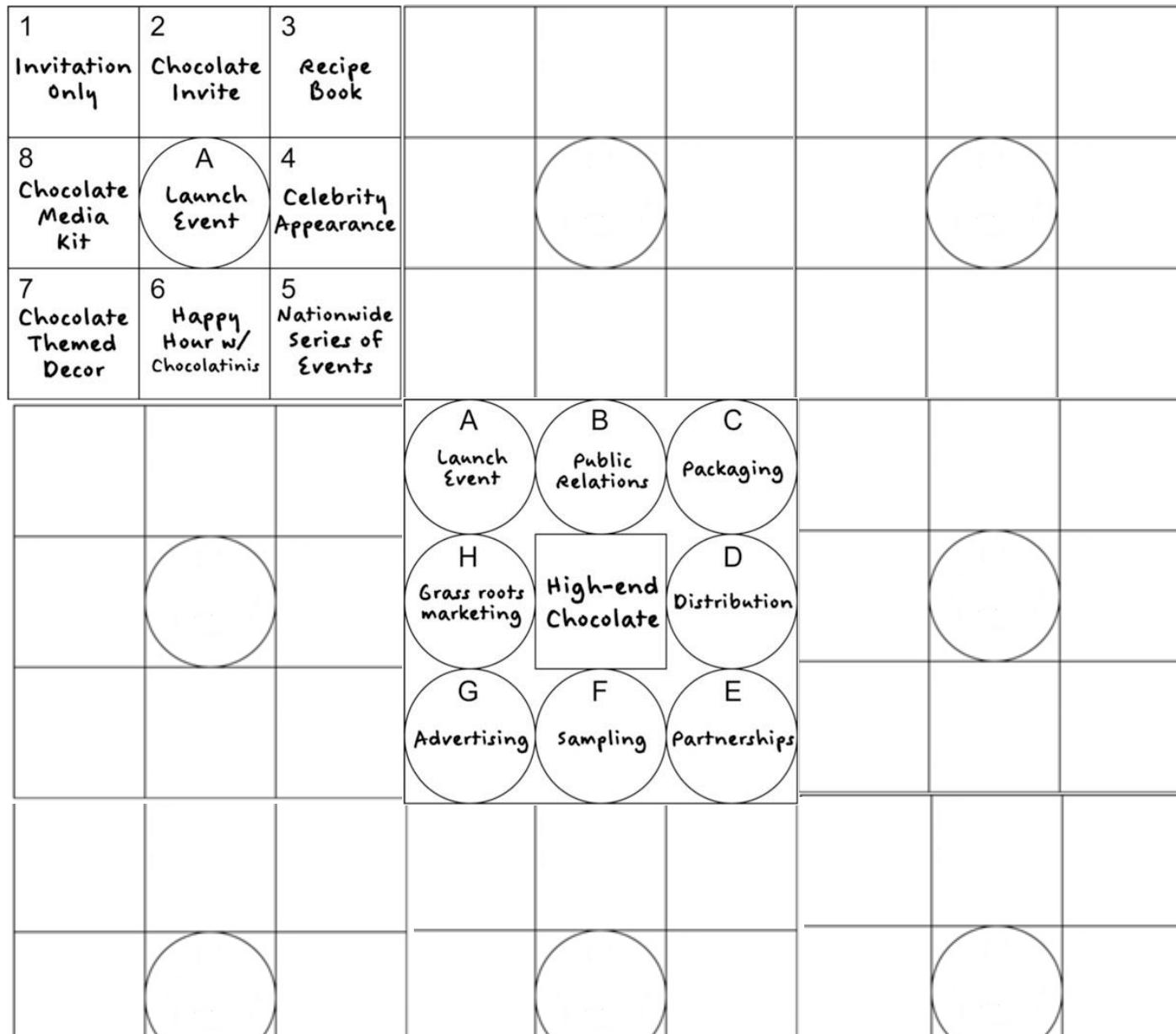
# Identify Access Points

## *Lotus Blossom Technique*

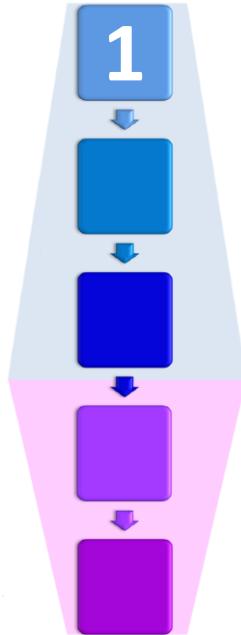
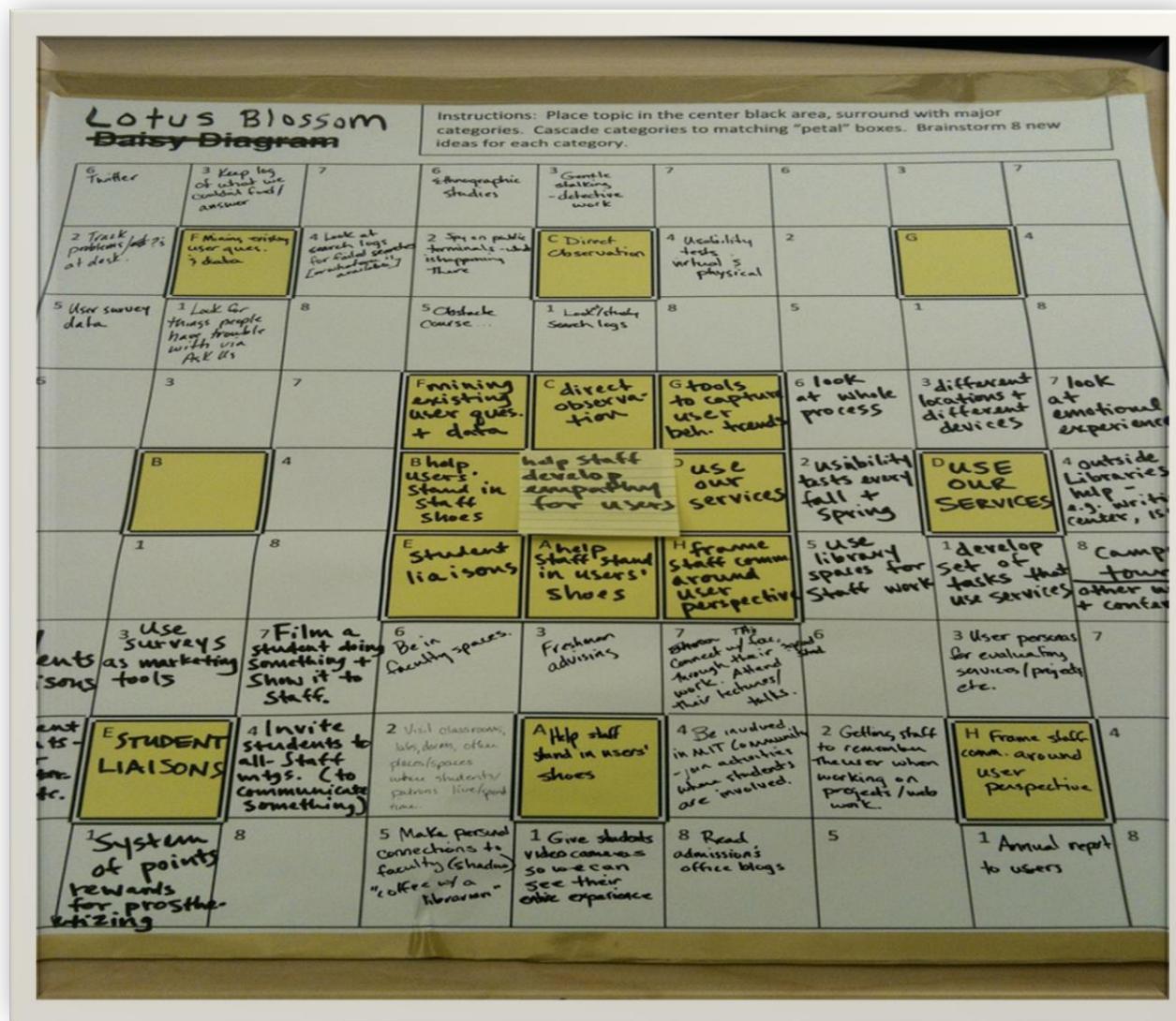
4. Use the ideas written in each of the eight surrounding stars as the central themes for another eight ideas
5. Try to think of 8 new ideas involving the new central theme  
→ **64 ideas!**



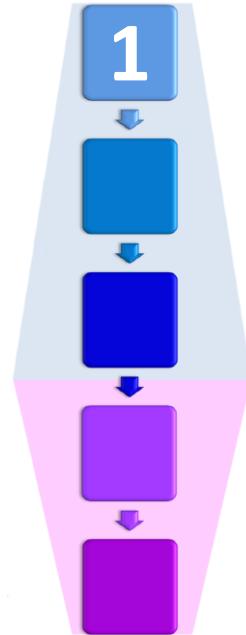
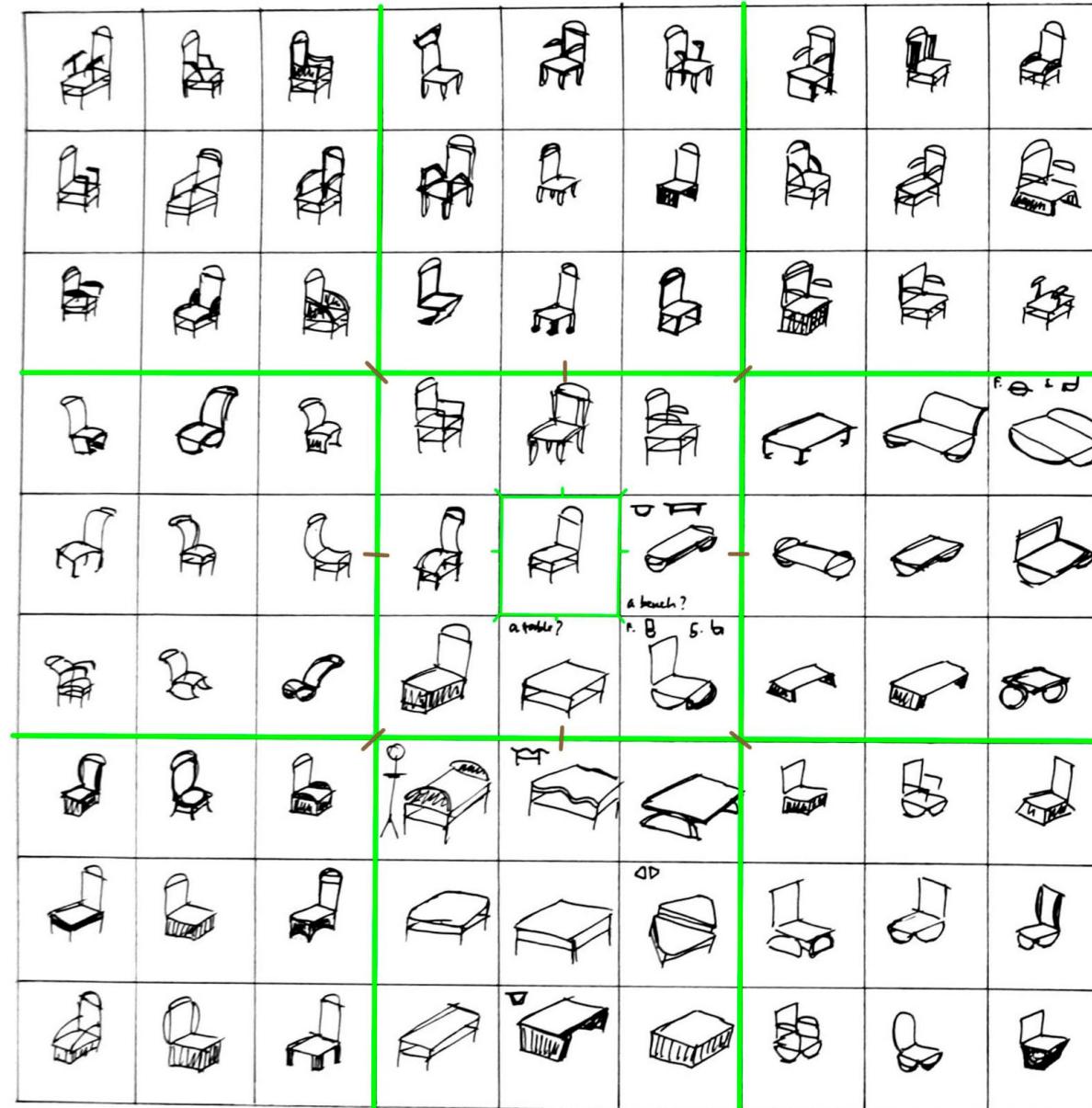
# Identify Access Points



# Identify Access Points



# Identify Access Points



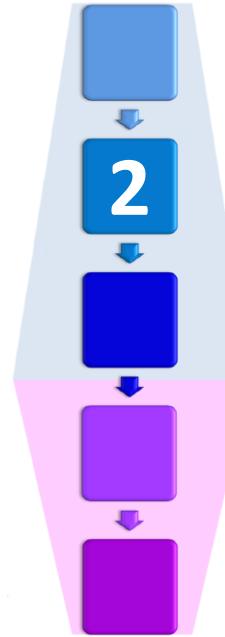
# Prepare your mind

## *Objective*

Clear your mind of common ideas

## *Technique*

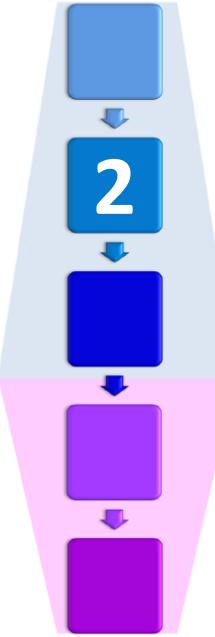
Short brainstorming

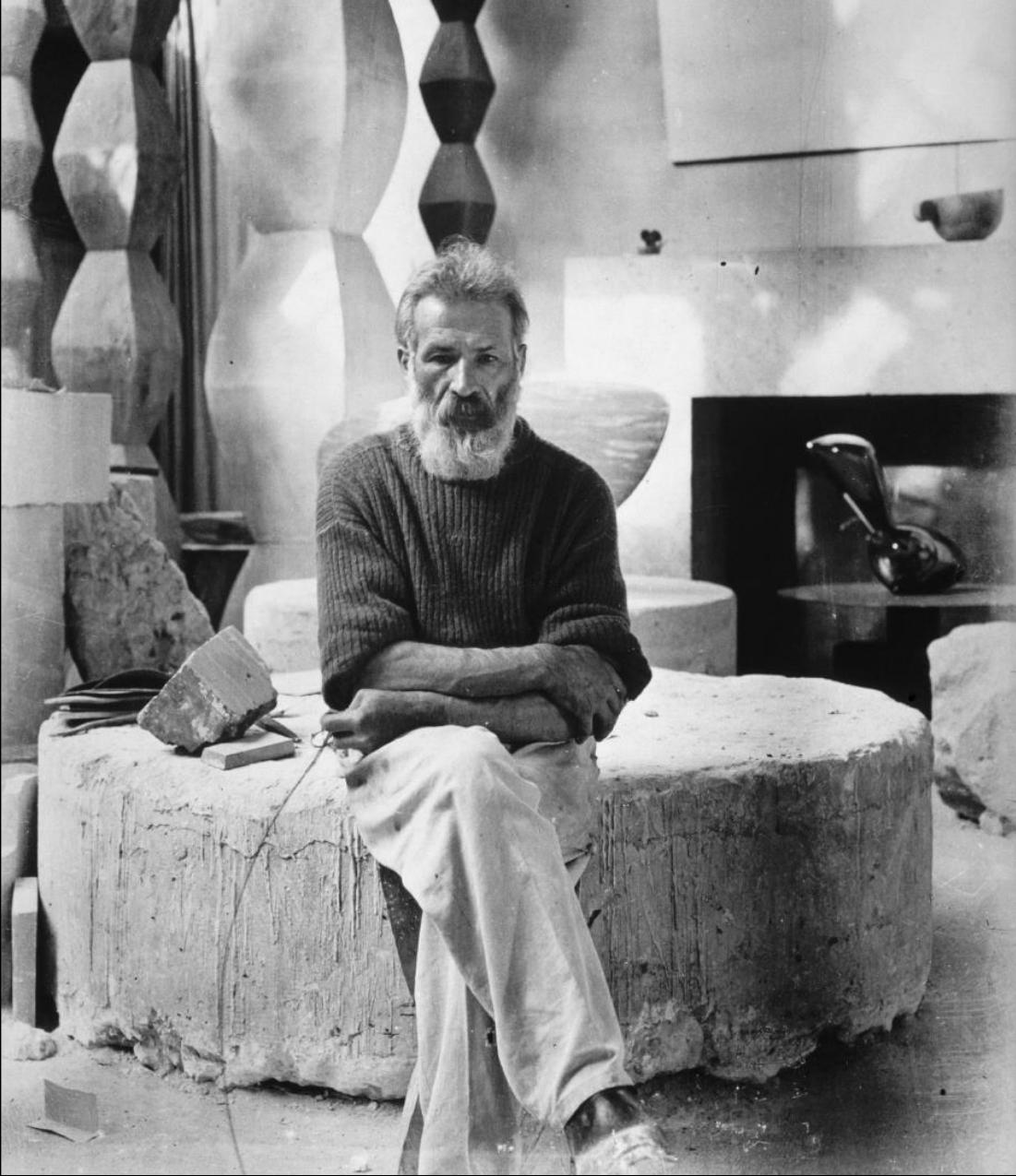


# Prepare your mind

## *Brainstorming*

- Don't judge the others ideas  
*"There are no bad ideas"*
- Encourage crazy ideas  
*"There are no ridiculous ideas"*
- Quantity not quality  
*"We just think, not reflect"*
- Each person has the same importance  
*"There is no hierarchy"*
- Create ideas from other ideas





**"Things are not  
difficult to be done,  
the most difficult is  
to put yourself in the  
state of doing them"**

*Constantin Brâncuși*

# Generate Ideas

## *Objective*

- generate a high number of ideas
- preserve brainstorming rules

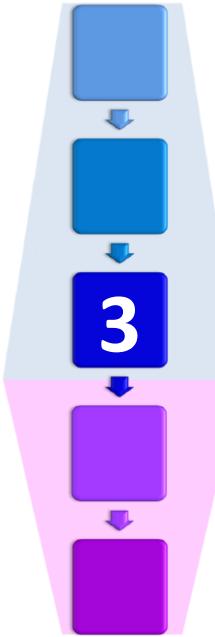
## *Techniques*

Great Minds

Break the Law

Roulette

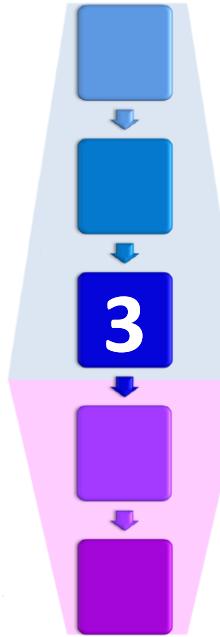
S.C.A.M.P.E.R.



# Generate Ideas

## ***Great Minds***

1. create a list of inspirational quotes
2. random chose one quote
3. write down all thoughts you have related to quote (even if they are not related with your problem)
4. Combine, develop, associate ideas, create links with your problem

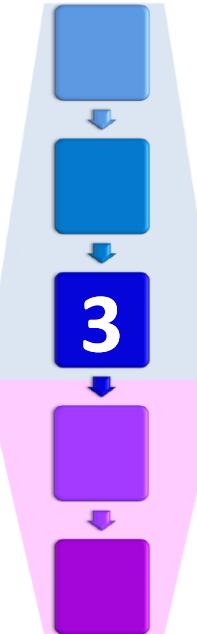


# Generate Ideas



*"If you hear a voice within you say, 'You cannot paint,' then by all means paint, and that voice will be silenced"*

Vincent Van Gogh



*"Originality is nothing but judicious imitation"*

Voltaire

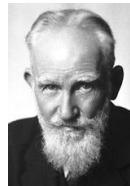


*"Creativity comes from a conflict of ideas"*

Donatella Versace

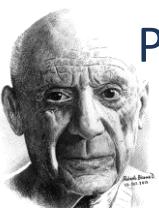
*"You see things; and you say, 'Why?' But I dream things that never were; and I say, 'Why not?'"*

George Bernard Shaw



*"Learn the rules like a pro, so you can break them like an artist."*

Pablo Picasso



# Generate Ideas

## *Roulette*

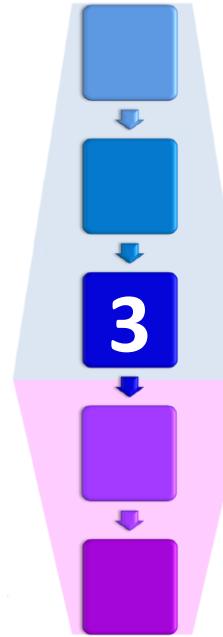
- Write down the problem or challenge
- Random chose an item/object that is not linked with the problem/challenge
- Write down all ideas about the item and/or item attributes
- Think how you can associate, connect, oppose or combine these ideas with your problem/challenge.



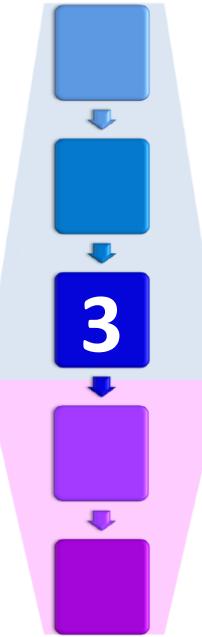
# Generate Ideas

## *Break the Law*

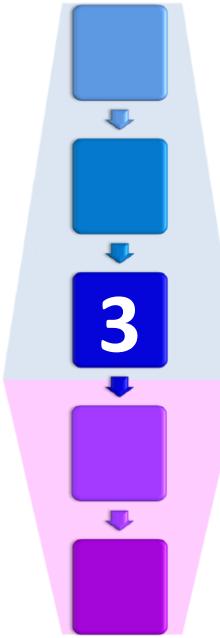
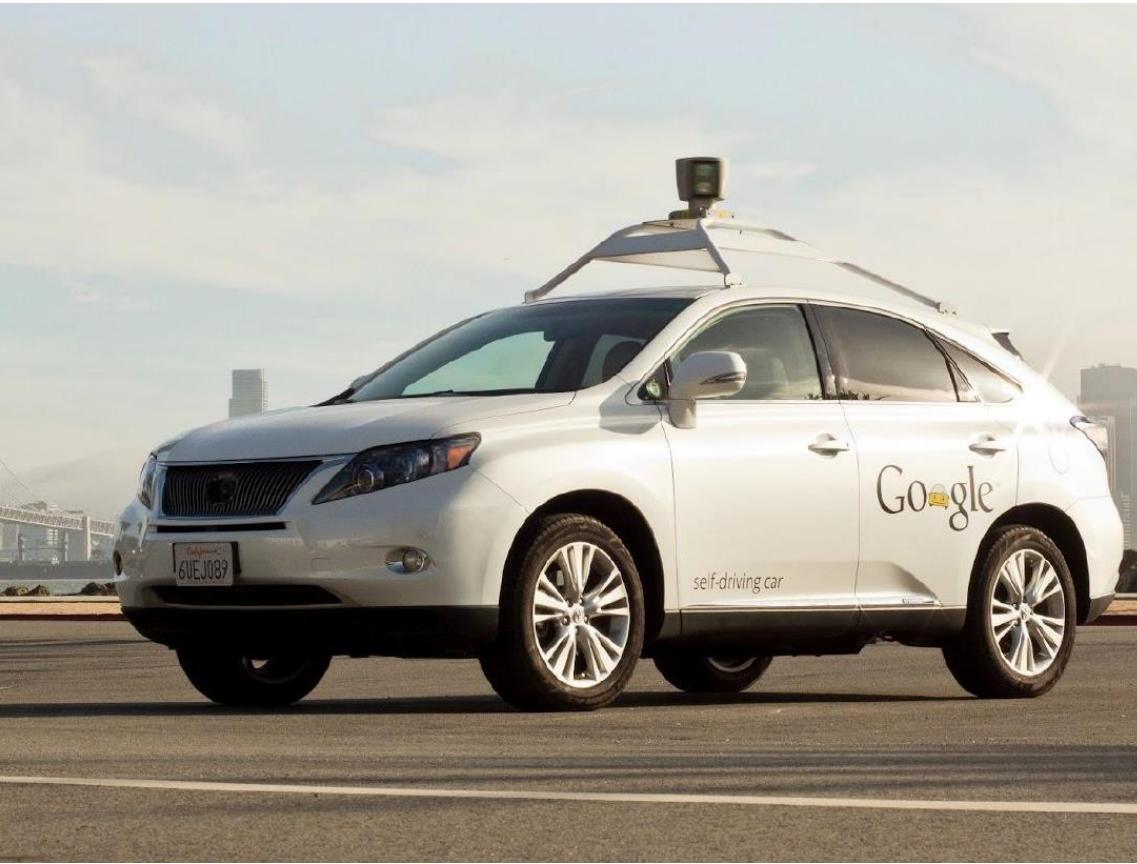
1. List all assumptions & rules about the topic
2. Search the opposite/contrary of the assumption/rule (if you do not find it ask yourself why)
3. How could we obtain an advantage from this



# Generate Ideas

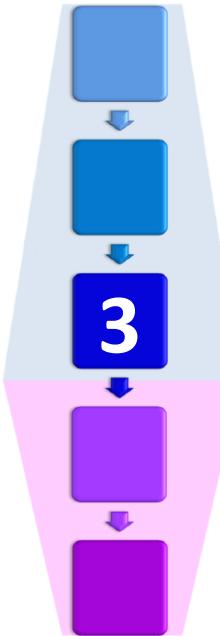


# Generate Ideas



# Generate Ideas

Seneca Anticafe (Bucharest) – you only pay for time.



# Generate Ideas

## **S.C.A.M.P.E.R.**

**S**ubstitute or Replace

**C**ombine two or more objects

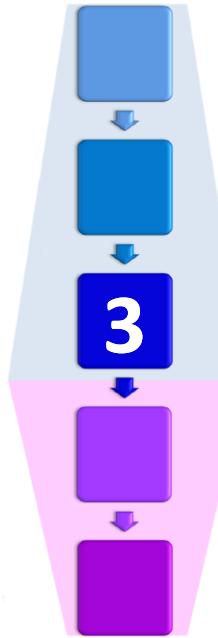
**A**dapt or change to fit the situation

**M**odify/**M**inify/**M**agnify- change an attribute

**P**ut to other use – a new use for something

**E**liminate – remove or omit one or more parts

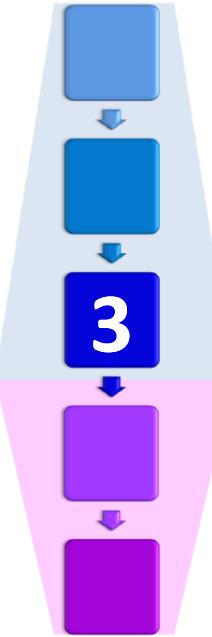
**R**everse/Rearrange – put it in a different order



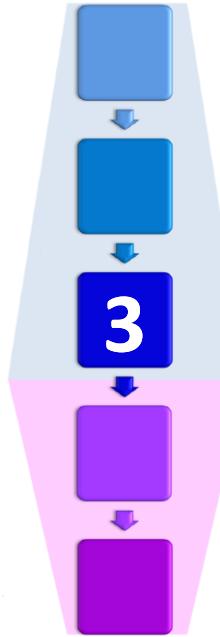
# Generate Ideas



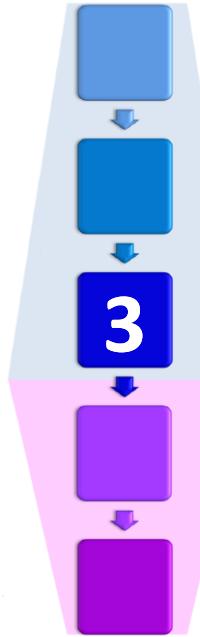
# Generate Ideas



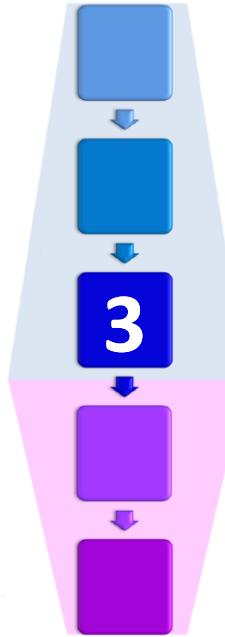
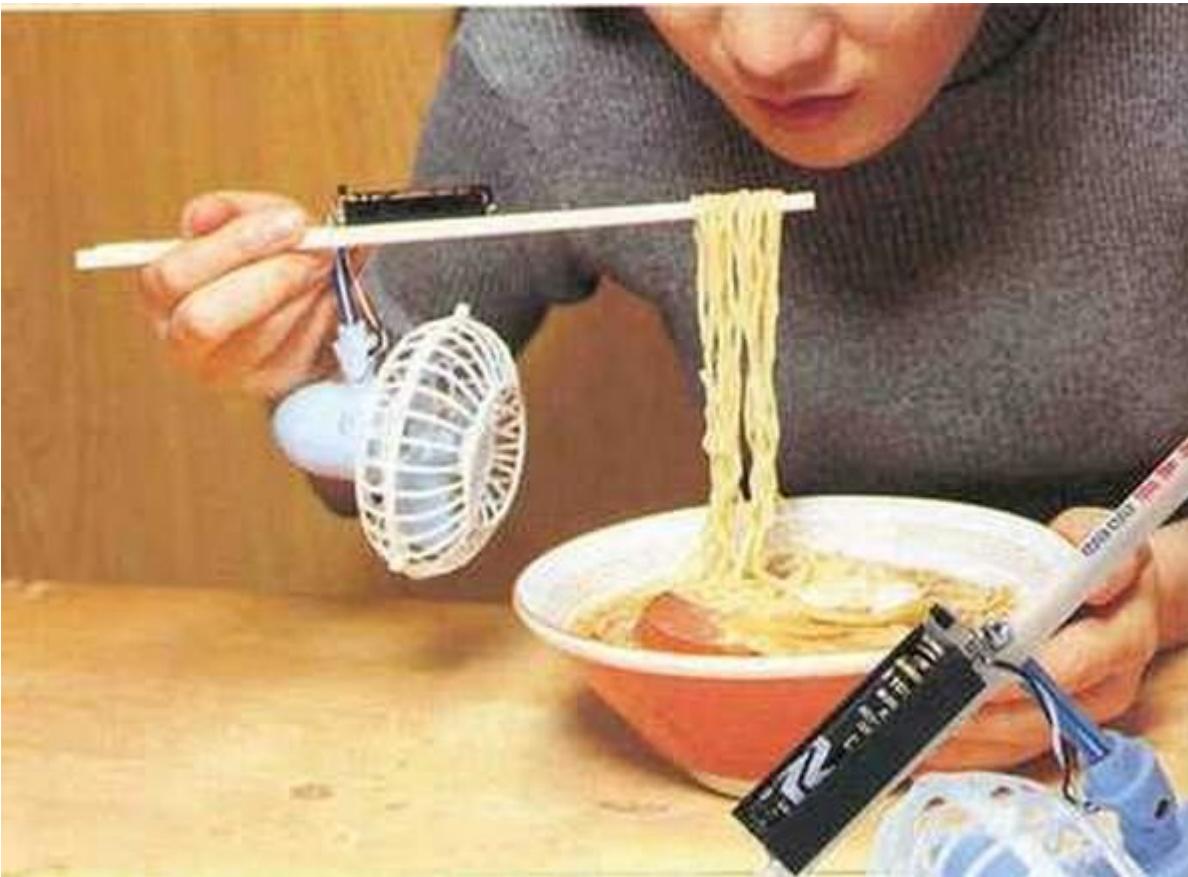
# Generate Ideas



# Generate Ideas



# Generate Ideas



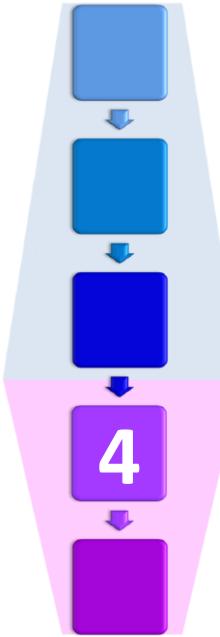
# Evaluate and Select Ideas

## *Objective*

Identify feasible solutions and

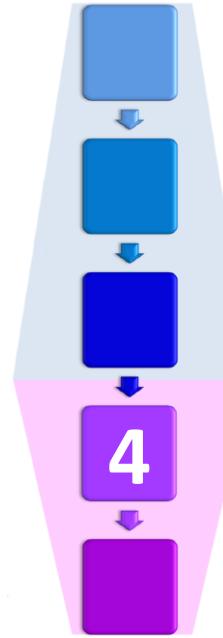
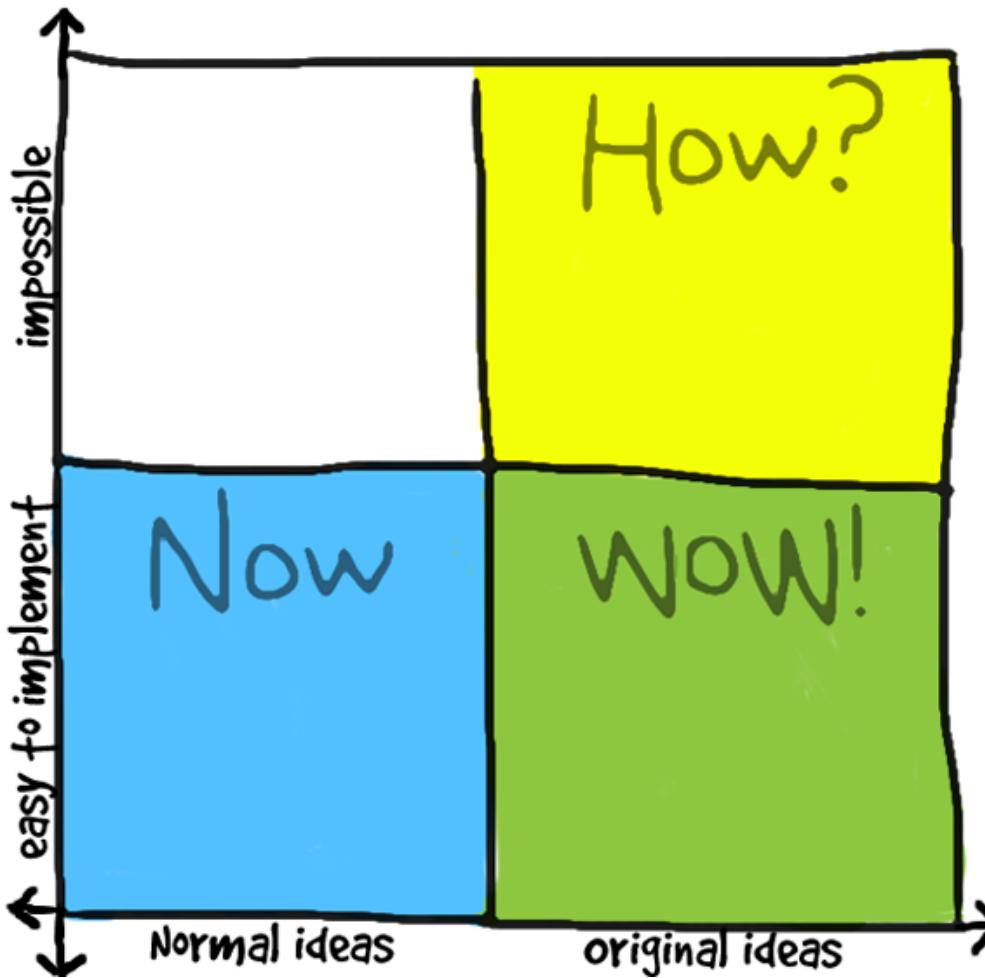
## *Technique*

Now!, How?, Wow!

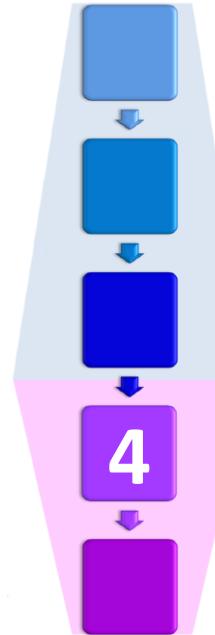
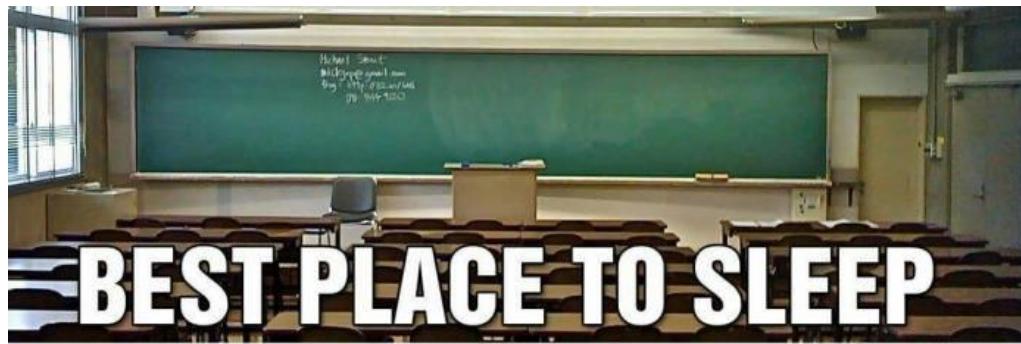


# Evaluate and Select Ideas

*Now, How?, Wow!*



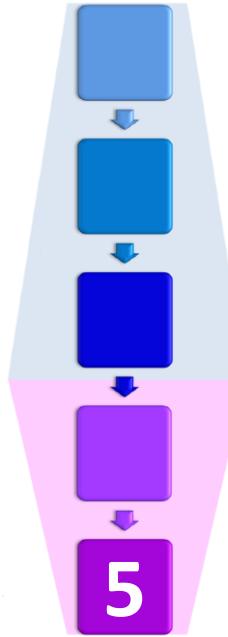
Sleep  
on it!



*“What is often lacking is not creativity in the idea-creating sense but innovation in the action-producing sense, i.e. putting ideas to work.”*

Theodore Levitt

# Implement Idea(s)



## *Objective*

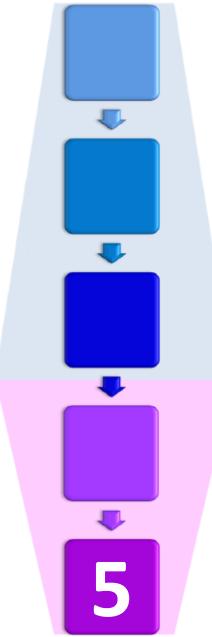
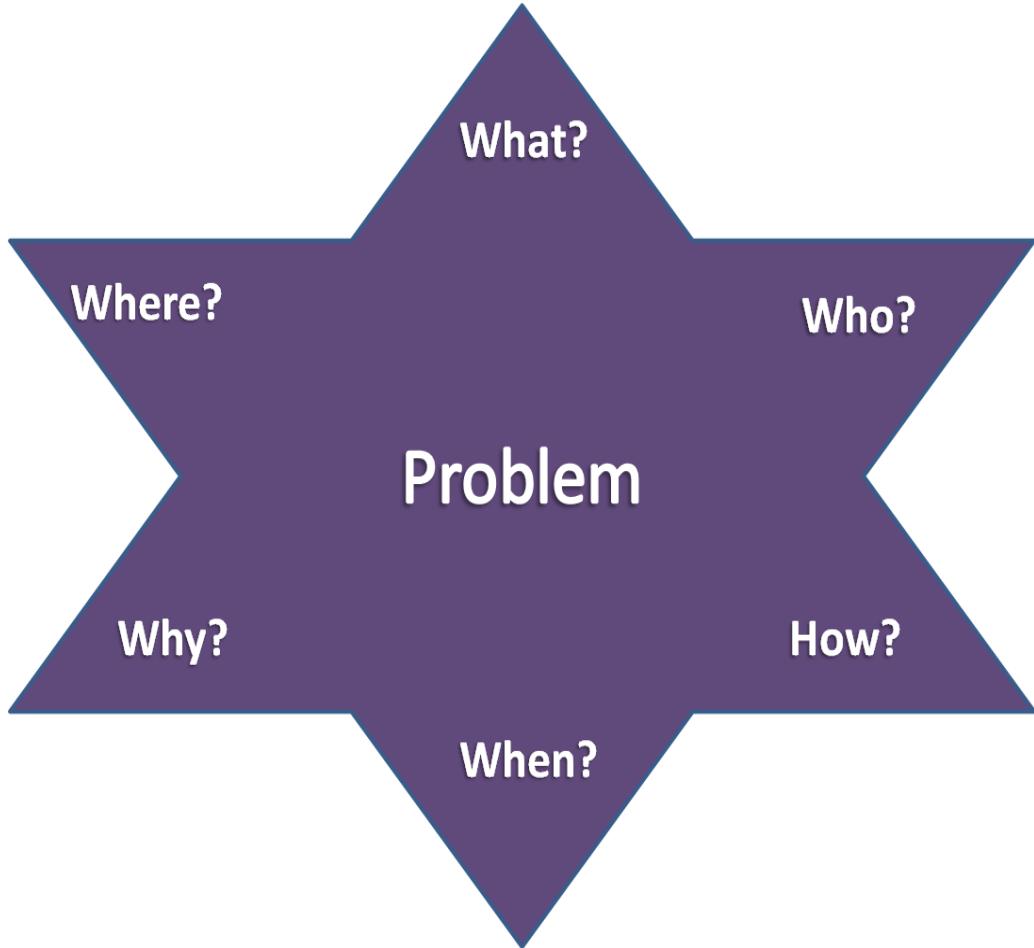
- Start implementing the solution
- Activate all elements involved in solving the problem

## *Technique*

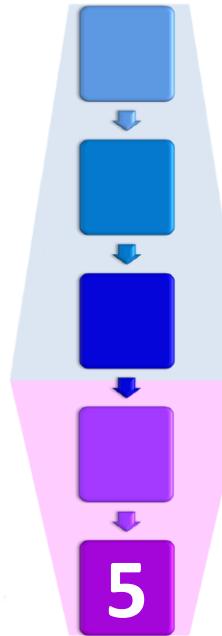
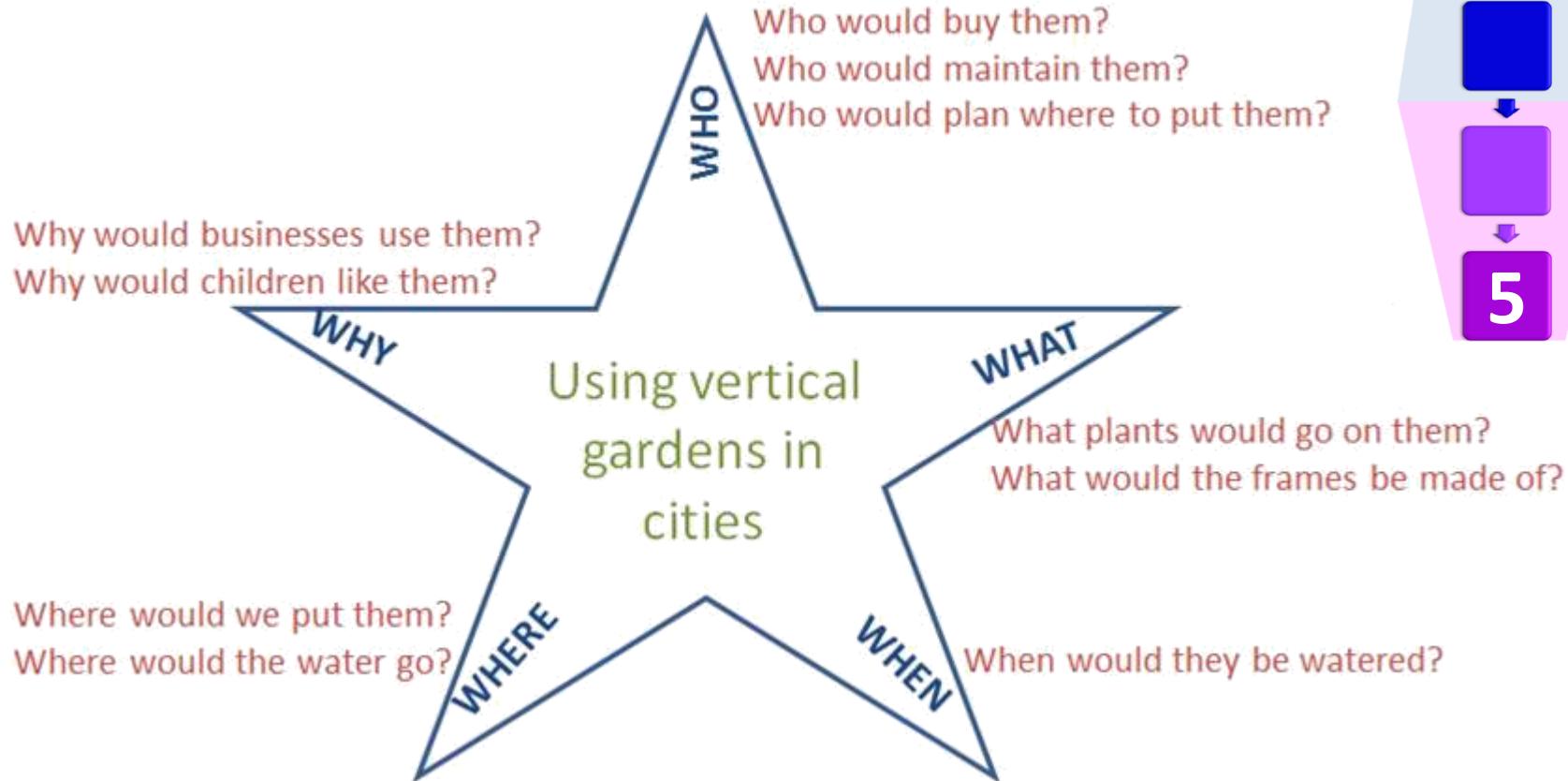
- Starbusting

# Implement Idea(s)

## *Starbusting*



# Implement Idea(s)



# Creative Problem Solving Techniques

