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How might we recognize and  
nurture it in ourselves and others?

# What is it?

## CREATIVITY

- is the generation of novel, useful or valuable ideas.
- can be expressed in any area of human endeavor.
- Novel, but not useful or valuable = bizarre
- Useful or valuable but not novel is = ordinary

## ACCORDING TO TORRANCE, THE “FATHER OF CREATIVITY”



“When a person has no learned or practiced solution to a problem, some degree of creativity is required”

# PEOPLE THINK OF CREATIVITY AS ARTS & THE EMINENT

But, creativity can be expressed in any field of human endeavor.

And all humans have creativity that can be nurtured.



# SOMETIMES CREATIVITY INVOLVES LOOKING AT THINGS IN A DIFFERENT WAY

ISSUE



Problem Defined



ALTERNATIVE PROBLEM DEFINED



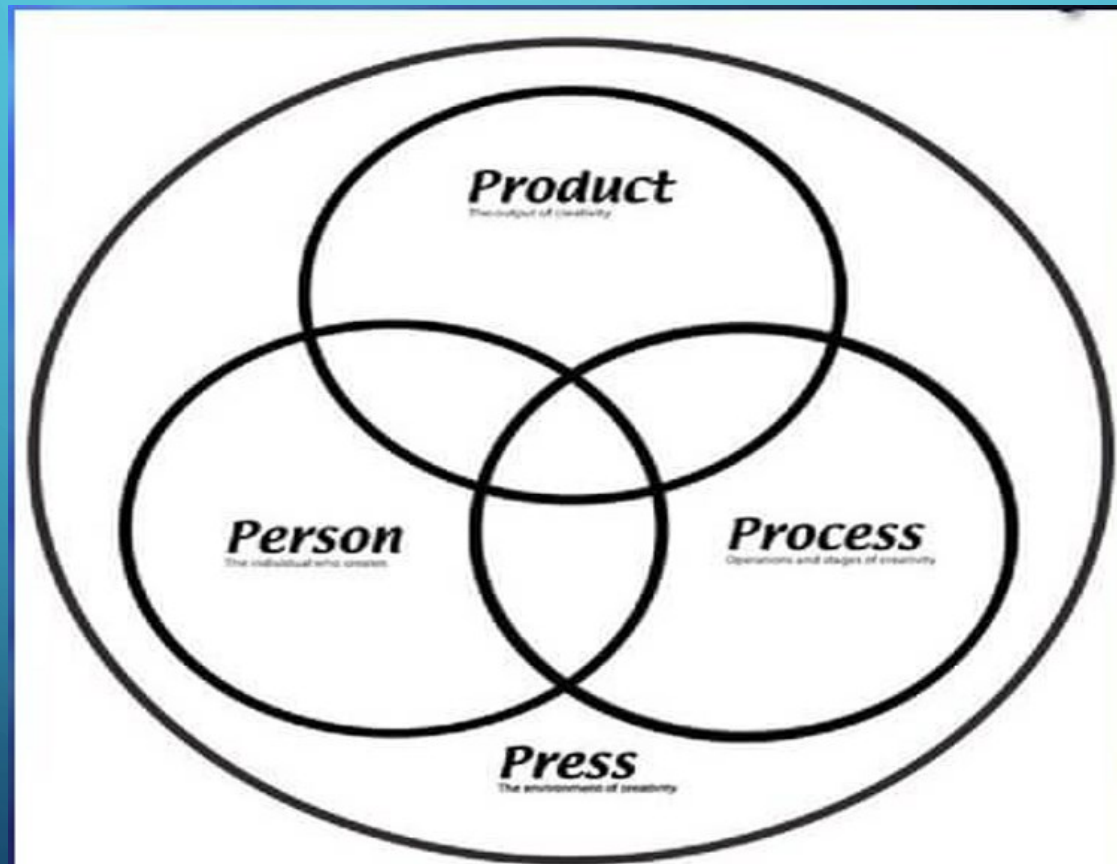
# CAN BE EXPRESSED AT DIFFERENT LEVELS: C OR c

- Association only with the highest levels of creativity
- Failure to recognize their own creativity and that of others





# FOUR COMPONENTS OF CREATIVITY (RHODES, 1961)



# PERSON





# Who has it?

## PERSON--ARE YOU CREATIVE?

Open to experience

Curious

Risk taking--Type T

Humor

Persistence

Courage

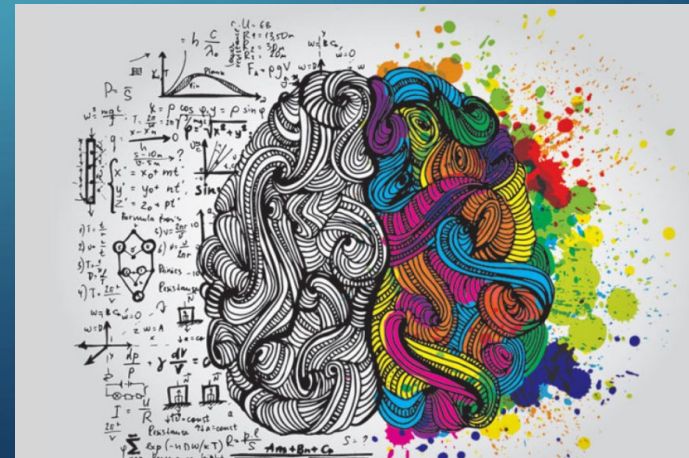


## WE ONCE THOUGHT

- Abilities such as intelligence and creativity were *unidimensional* and *static*
  - *Unidimensional*--One number could indicate measure
  - *Static*--Amount is inborn and stays the same throughout life

## NOW WE KNOW

- Intelligence and creativity are *multidimensional* and *malleable*
- there is an interaction between genetics and experiences that can help or hinder development--epigenetics



# PRODUCT



# How is it expressed?

## PRODUCT

. . . I soon discovered that I had, like most other people, been thinking of creativeness in terms of products, and secondly, I had unconsciously confined creativeness to certain conventional areas only of human endeavor. . . theorists, artists, scientists, inventors, writers. . .

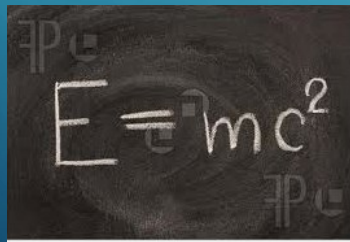
But these expectations were broken up by various of my subjects. For instance, one woman, uneducated, poor, a full-time housewife and mother, did none of these conventionally creative things and yet was a marvellous cook, mother, wife and homemaker. . . . She was in all these areas original, novel, ingenious, unexpected, inventive. . . I learned from her that a first-rate soup is more creative than a second-rate painting, and that, generally, cooking or parenthood or making a home could be creative while poetry need not be. . . (pp. 135-136)

Maslow, A. H. *Toward a psychology of being*. Princeton, N. J.: D. Van Nostrand, 1962.

# WHAT ARE CREATIVE PRODUCTS?

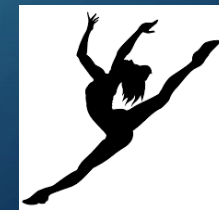
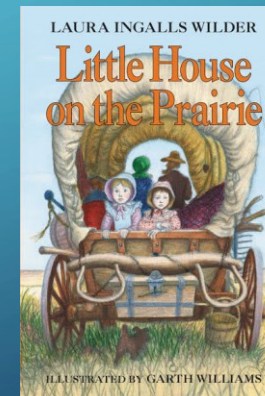
## INVENTIVE OR INNOVATIVE:

- Address a worthwhile problem
- Novel and appropriate solution



## EXPRESSIVE:

- Illustrate emotions & aesthetics
- Original and valuable



# NOT A DICHOTOMY: CREATIVITY REQUIRES SOME AESTHETICS AND PROBLEM SOLVING

INVENTIVE-AESTHETIC EXPERIENCE IN  
THE REALIZATION OF AN ELEGANT  
SOLUTION TO A PROBLEM



Volvo flexible solar panel that charges  
the car and folds up to fit in the trunk

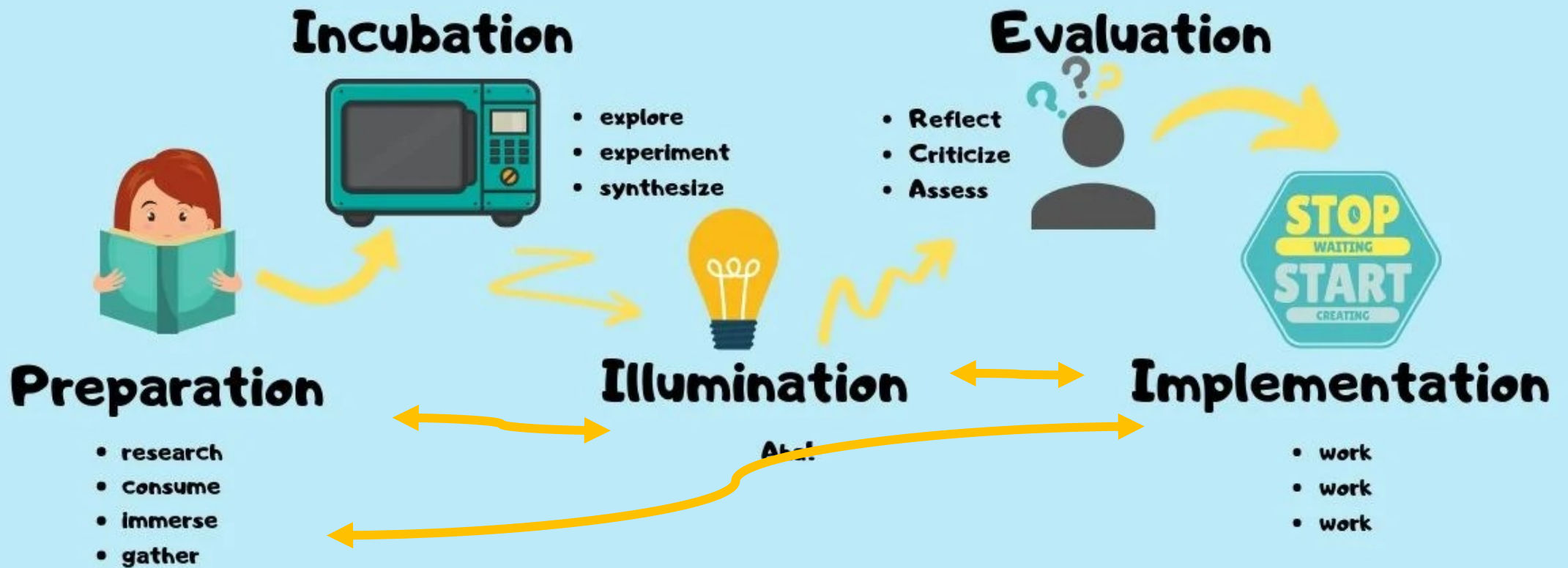
EXPRESSIVE--MANY PROBLEMS TO BE SOLVED  
IN THE COMPLETION ANY ARTISTIC  
EXPRESSION



photographs of Picasso's creative process and his struggle  
between political imagery and artistic merit in creating  
Guernica

# PROCESS

## 5 Stages of the Creative Process



# How can we develop it?

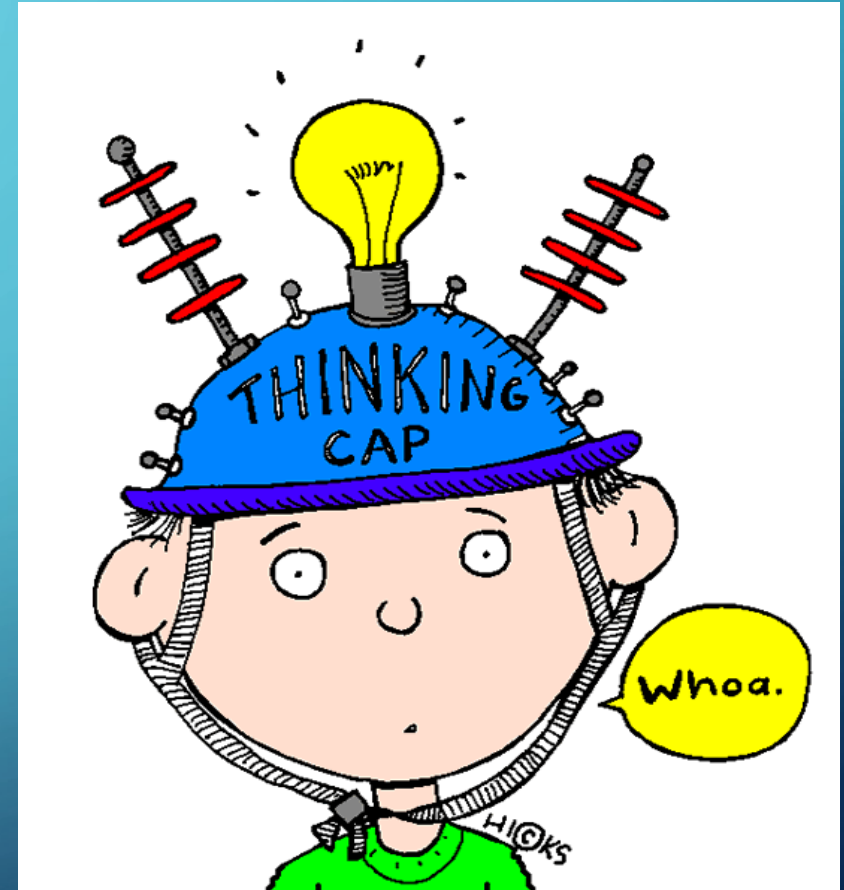
## PROCESS

- Develop creative approaches and dispositions.
- Learn creative skills
- Focus on goals through visual and verbal cues.
- Remove Blocks.
- Create opportunities for creativity and ways to capture, evaluate, and operationalize ideas.



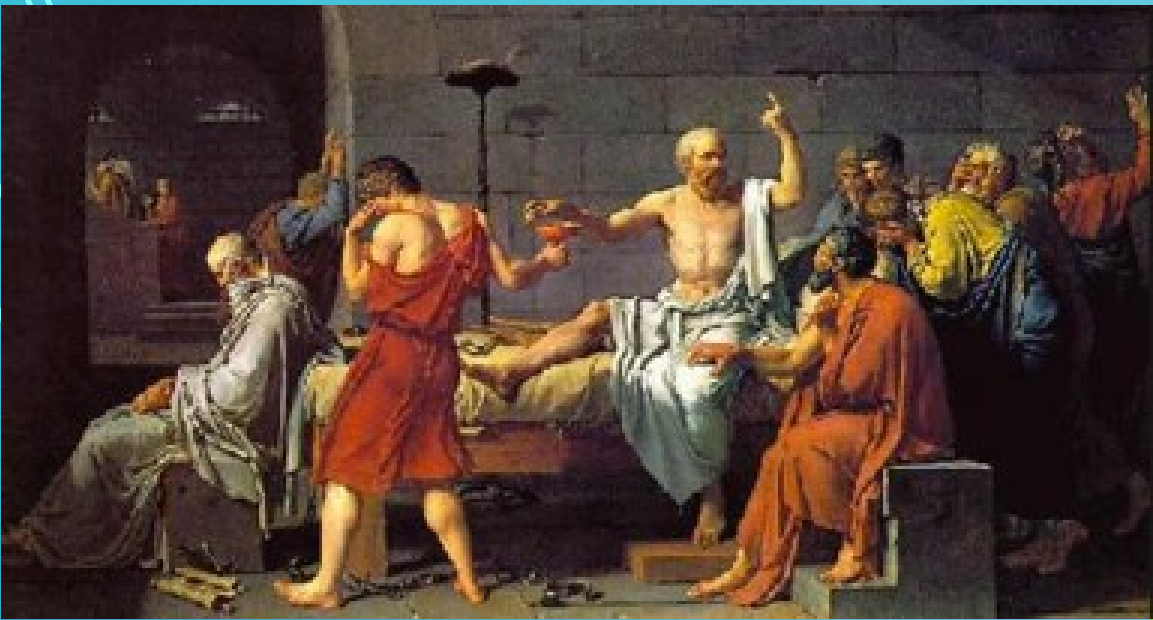
# WHAT ARE SOME THINKING DISPOSITIONS?

- Open-minded
- Curious
- Skeptical
- Strategic
- Careful and precise
- Seek and evaluate reasons
- Metacognitive—think about thinking



Tishman, S., Jay, E., Perkins, D.N. (1993). Teaching thinking dispositions: From Transmission to enculturation. *Theory into practice*, 32(Summer), 147-153.

# DISPOSITIONS ARE TAUGHT THROUGH MODELING AND OPPORTUNITIES



**Models** of good thinking dispositions and behaviors

**Explanations** of good thinking approaches and strategies

**Interactions** using reasoning and discussing it

**Feedback** that thinking is supported, encouraged, and clearly valued.

## EXAMPLE: MR. WHITSON'S 6<sup>TH</sup> GRADE SCIENCE LESSON ABOUT THE CATTYWAMPUS



As he passed around a skull and the class took notes, he described...

- an ill-adapted nocturnal animal that was wiped out during the Ice Age.
- how no trace of the animal remained
- its amazing night vision
- the color of its fur and any number of other facts

from essay: Best Teacher I Ever Had by David Owen (Reader's Digest – Asian Edition, April 1991, pp. 47-48)

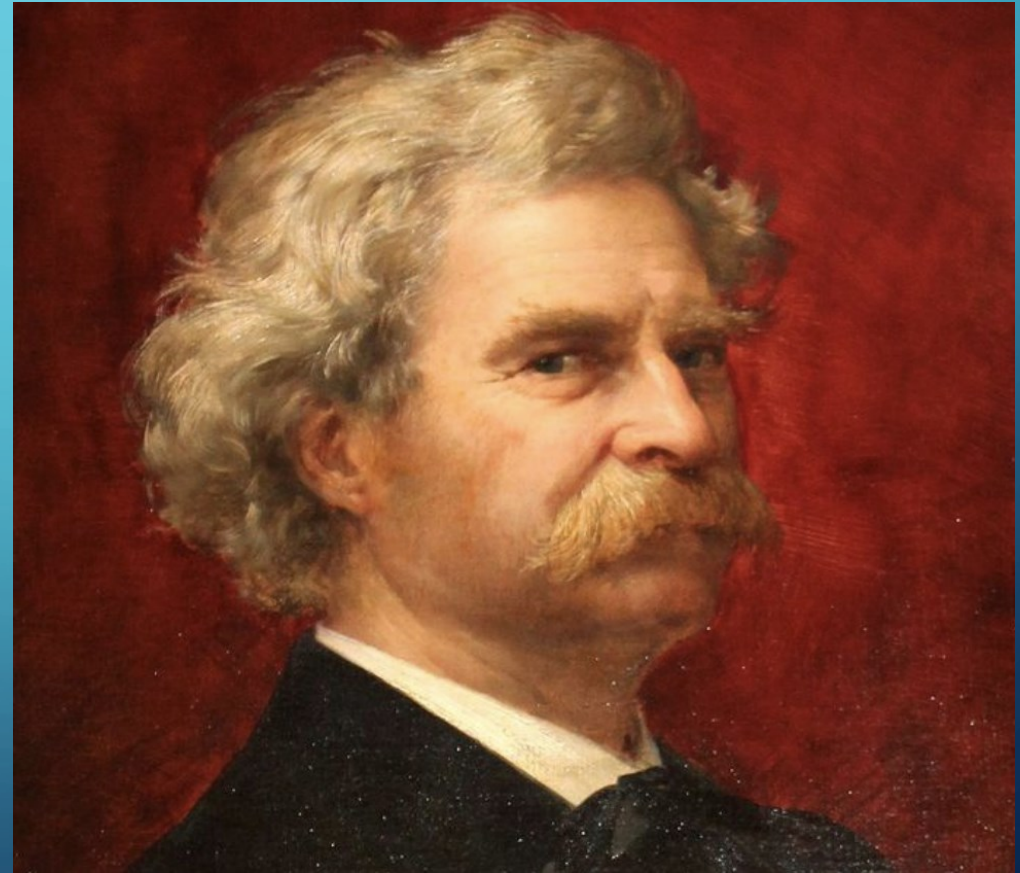
# ALL FAILED THE QUIZ—THERE WAS NO SUCH ANIMAL!

- Hadn't he been telling us that no trace of the animal remained?
- How could he have known about fur color, etc.? Even the name was silly.
- But, we learned skepticism and to question.



# THE IMPORTANCE OF INCULCATING DISPOSITIONS

“A person who won’t read has no advantage over one who can’t read.”



Mark Twain

## SOME EXAMPLES OF CREATIVE SKILLS & PROGRAMS

- Creative Problem Solving: Osborne & Parnes
- DeBono Lateral Thinking
- Metaphorical thinking and Synectics, etc.

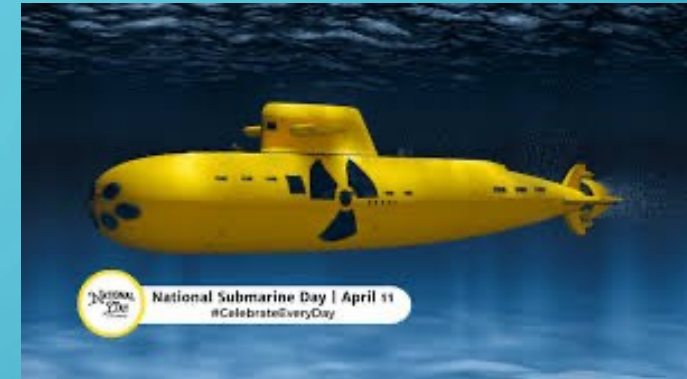
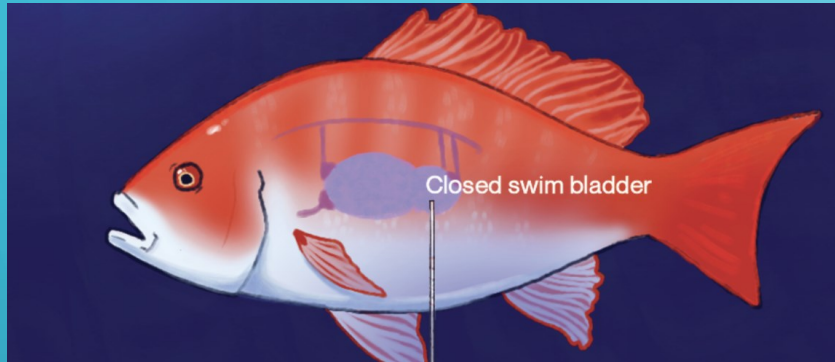
# CREATIVE PROBLEM SOLVING—OSBORN & PARNES

A systemic way to:

- Identify and define problems
- Seek innovative and effective solutions
- Evaluate, and
- Implement them



# USING ANALOGY OR METAPHOR TO SOLVE A PROBLEM



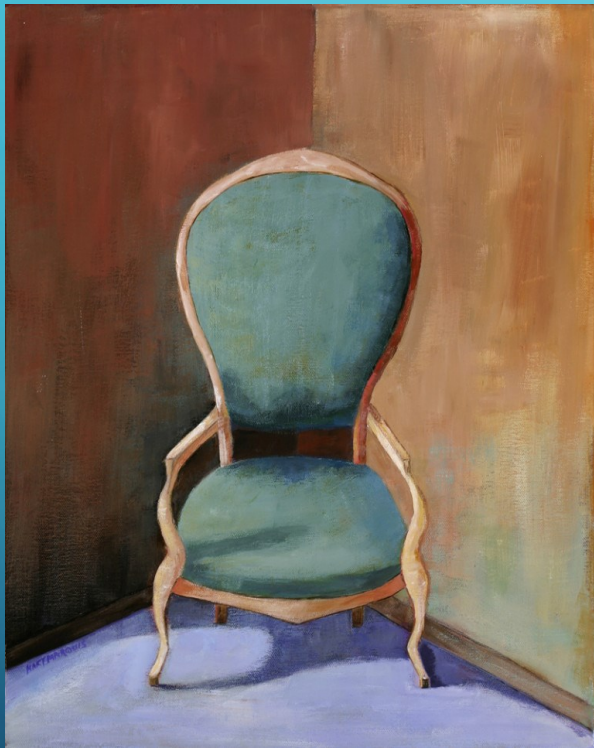
How does nature solve this problem?



Or, how was a similar problem solved in another domain?



# THE USE OF METAPHOR IN THE ARTS MAY BE MORE CLEAR



***Green Chair, [Ann Hart Marquis](#)***  
*acrylic on canvas, 16 x 20 x 1.5 inches*

- “A metaphor’s purpose in art, whether in painting, sculpture, or writing, is to elicit a specific emotion or thought in the person who reads or sees the work. Metaphors use symbolism and analogies to emphasize a point, and they can also be used to represent specific ideas or thoughts. Depending on the artist’s emotions, ideas, or experiences, visual metaphors can be obvious or abstract.”
- [https://spiegato.com/en/what-is-the-function-of-metaphor-in-art#google\\_vignette](https://spiegato.com/en/what-is-the-function-of-metaphor-in-art#google_vignette)

# DEBONO'S LATERAL THINKING, EXAMPLES

- EBS--Examine Both Sides
- ADI--Agreement, Disagreement, Irrelevance (to look at sides in argument--should come after EBS)
- OPV--Other People's Views: Two parts: Identifying the other people who are really part of the situation; Getting into the shoes of all of these others
- PMI--Plus, Minus, Interesting

# BLOCKS TO CREATIVITY

Many things can block our creative expression

- Perceptual
- Cultural
- Psychological
- Environmental

# BLOCKS TO CREATIVITY

**Example of a Perceptual Block--the tendency to delimit the problem area too closely.**

- Draw 9 dots on your paper like that -----  
-----→



- Then, draw no more than 4 straight lines

- Without lifting your pencil from the paper, and



- Cross through every dot once

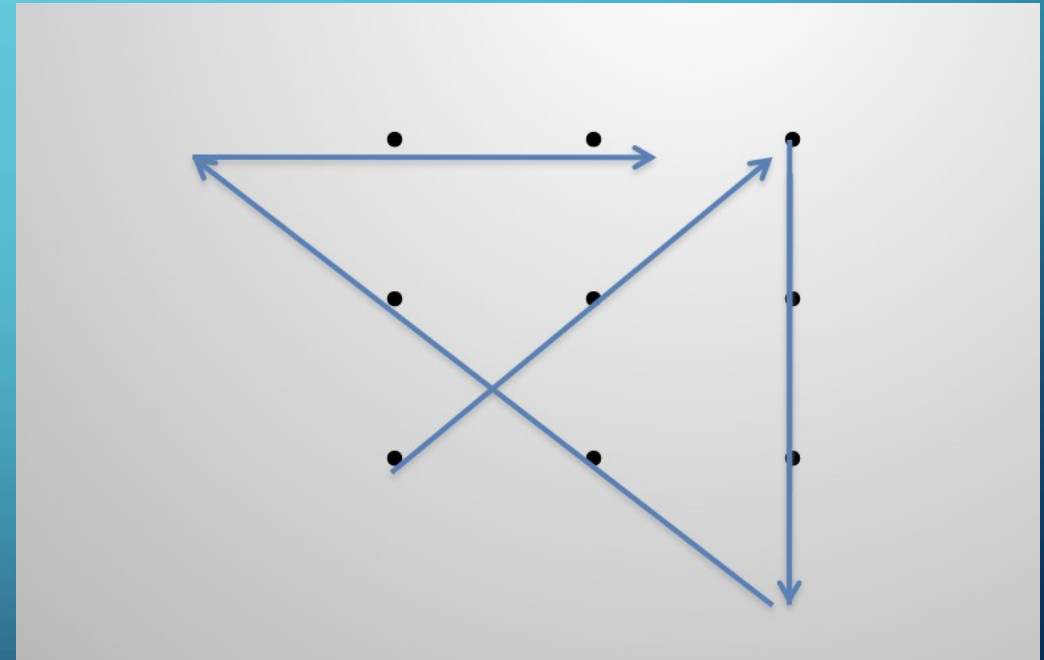


- If you have seen a solution to this, try to think of an alternative one.

Adams, J.L. (2019). *Conceptual blockbusting: A guide to better ideas* (5<sup>th</sup> ed.). New York, NY: Basic Books. (Originally published in 1986.)

# SOLUTIONS

- One solution is to go beyond the boundaries of the rectangle formed by the dots.



## ALTERNATIVE RESPONSES

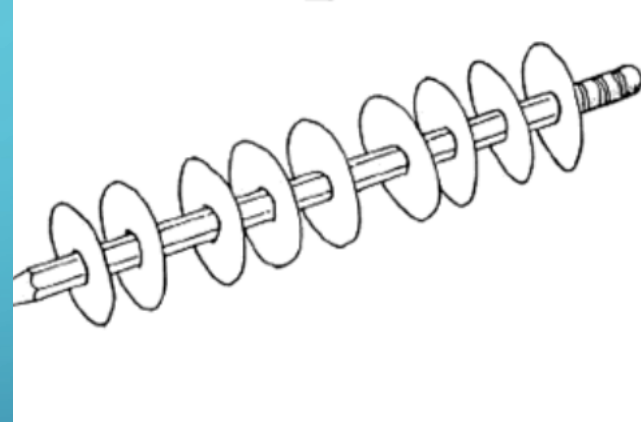
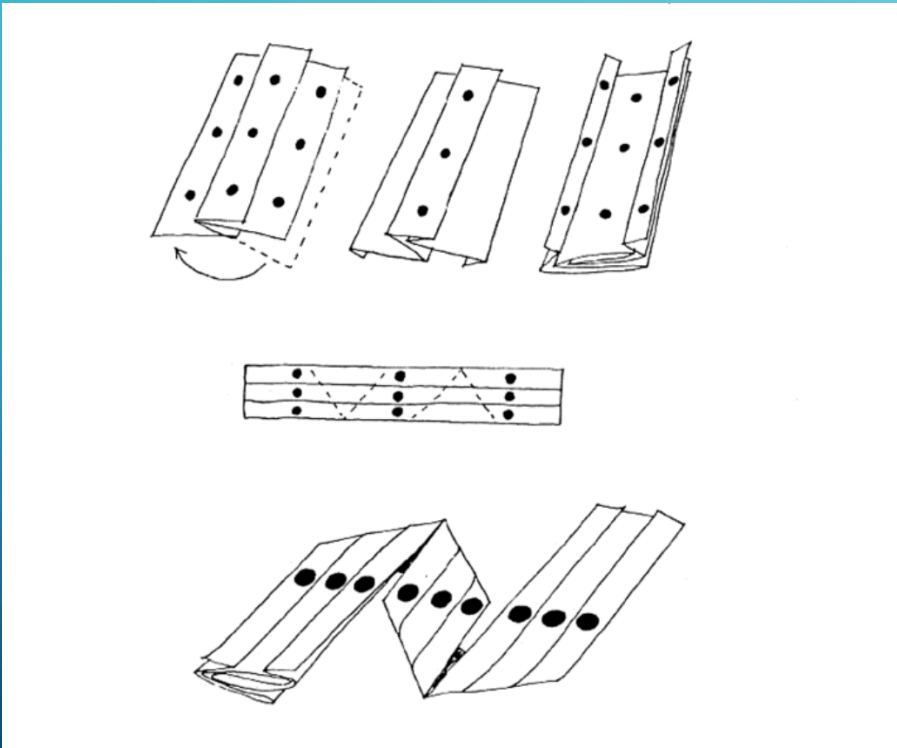
- Cut the dots out, line them up and use 1 straight line.



- Curve the paper around and use 1 winding line.



# ALTERNATIVE RESPONSES



# ADAMS' FAVORITE RESPONSE


May 30, 1974

5 FDR <sup>Navasa</sup>  
Roosevelt Rds. ~~100~~  
Ceiba, P.R. 00635

Dear Prof. James L. Adams,  
My dad and I were doing puzzles  
from "Conceptual Blockbusting". We  
were mostly working on the dot ones, like  
::: My dad said a man found a way  
to do it with one line. I tried and did  
it. Not with folding, but I used a fat line.  
I doesn't say you can't use a fat line.  
Like this

P.S.

acctually you  
need a very fat  
writing apparatice

 ←  
Sincerely,  
Becky Buechel  
age: 10



## SOME EXAMPLES OF ENVIRONMENTAL BLOCKS

- A. Lack of cooperation and trust among colleagues  
(Murder Committees)
- B. Autocratic boss who values only his own ideas; does not reward others
- C. Distractions--phone, easy intrusions
- D. Lack of support to bring ideas into action

# THERE ARE MANY OTHER TYPES OF BLOCKS SUCH AS

- Cultural taboos—
  - boys don't dance ballet;
  - girls aren't sculptors
- Psychological constrictions—
  - fear to try something different;
  - poor self esteem;
  - fear of being different
- Environmental blocks—
  - lack of resources, opportunities, training, etc.

# PRESS

## THE RELATIONSHIP BETWEEN HUMAN BEINGS AND THEIR ENVIRONMENT



## Awareness of Learners' Needs

Work  
outside  
school

Challenges matched  
to abilities of learners

intrinsic rewards  
opportunities to find &  
solve problems  
balance of stimulation  
and quiet time

Respect

Psychologically  
Safe

Partnerships  
with outside  
agencies

Collaboration

Playful or games -based

Flexible Use of space and time

Non-prescriptive planning

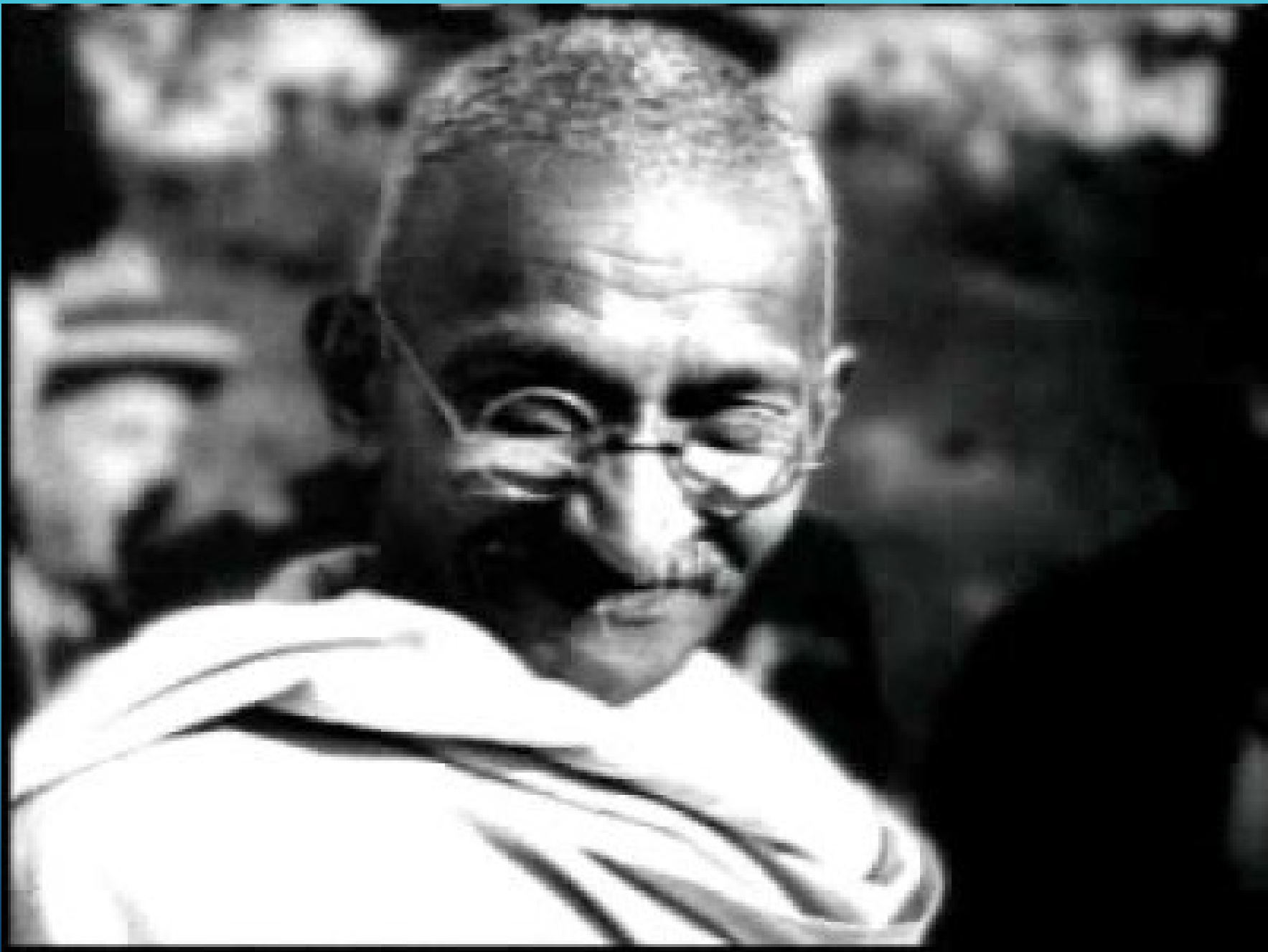
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# SITUATIONAL OUTLOOK QUESTIONNAIRE

TABLE 1  
DIMENSIONS OF CREATIVE CLIMATE ASSESSED BY SITUATIONAL OUTLOOK QUESTIONNAIRE

Dimension	Description	Sample Item
Challenge/Involvement	The degree of emotional involvement, commitment, and motivation in the operations and goals.	The work atmosphere here is filled with energy.
Freedom	The level of autonomy, discretion, and initiative in behavior exerted by individuals to acquire information, make decisions, etc.	People here make choices about their own work.
Trust/Openness	The degree of emotional safety, and openness found in relationships.	People here do not steal each others' ideas.
Idea Time	The amount of time people can use (and do) for elaborating new ideas.	Time is available to explore new ideas.
Playfulness/Humor	The display of spontaneity, ease, good natured joking, and laughter that is displayed.	People here exhibit a sense of humor.
Conflict	The presence of personal and emotional tensions or hostilities.	There are power and territory struggles here.
Idea Support	The degree to which new ideas and suggestions are attended to and treated in a kindly manner.	People usually feel welcome when presenting new ideas here.
Debate	The expressing and considering of many different view-points, ideas and experiences.	A wide variety of viewpoints are expressed here.
Risk-taking	The tolerance of ambiguity and uncertainty.	People here often venture into unknown territory.

Isaksen, S.G., Lauer, K.J., Ekvall, G. (1999). Situational outlook questionnaire: A measure of the climate for creativity and change. *Psychological Reports, 85*, 665-674.



<https://www.youtube.com/watch?v=m7ehzxCG3n8>