

CREATIVITY AGENDA – Sept. 20, 2022

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- **What to do BEFORE the Creativity Phase**
 - Selecting functions to brainstorm
- **What to do DURING the Creativity Phase**
 - Show how it feels to be creative
 - Present some tips to avoid problems
 - Show creative puzzles
- **What to do AFTER the Creativity**
 - Evaluation techniques

Value Engineering Job Plan

Information

Function Analysis

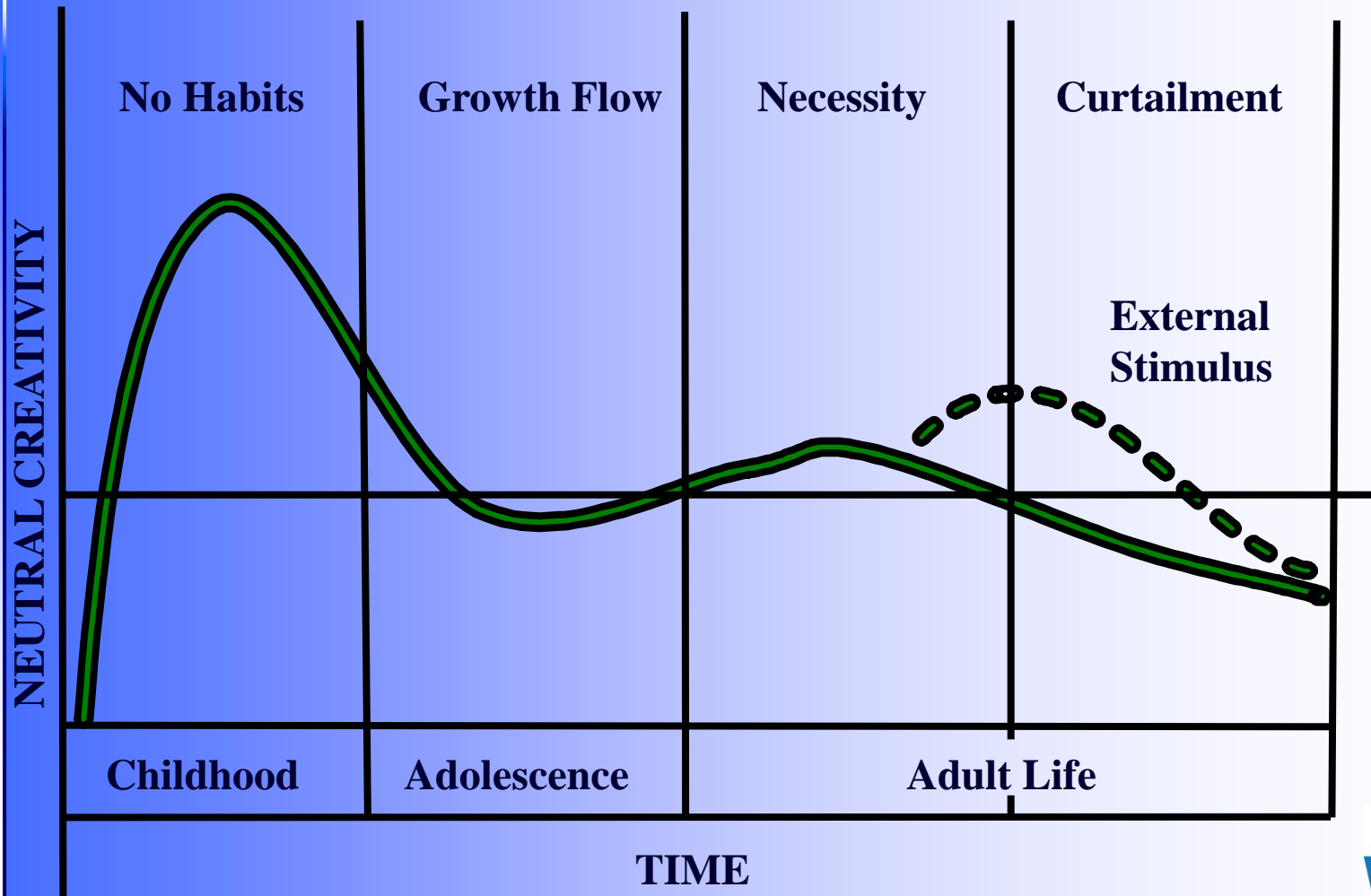
Creativity

Evaluation

Development

Presentation

CREATIVE CYCLE

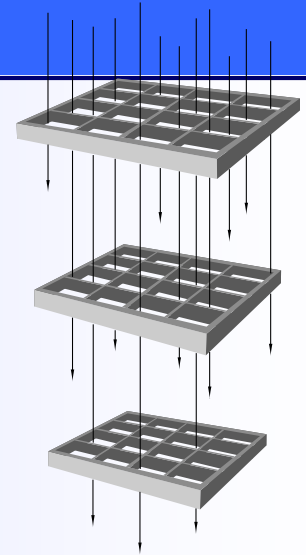


WHO IS CREATIVE?

- **Artists**
- **Pioneers**
- **Teachers**
- **Engineers**
- **Writers**
- **??**
- **But... we all are creative!!!**

WHY ARE THEY CREATIVE?

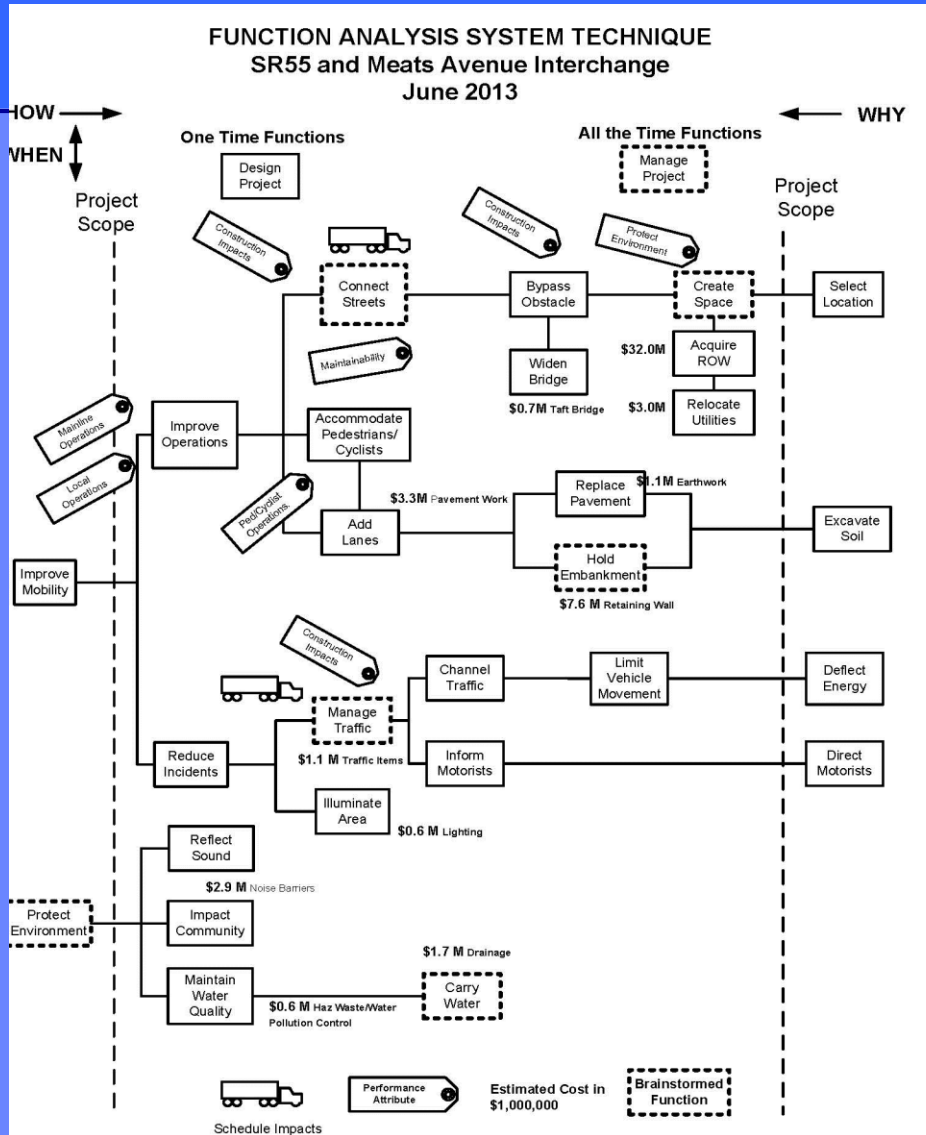
- **We have Mental Filters**
- **Our brains are a two-way street**
street
- **But sometimes what goes in
.... does not always come out**



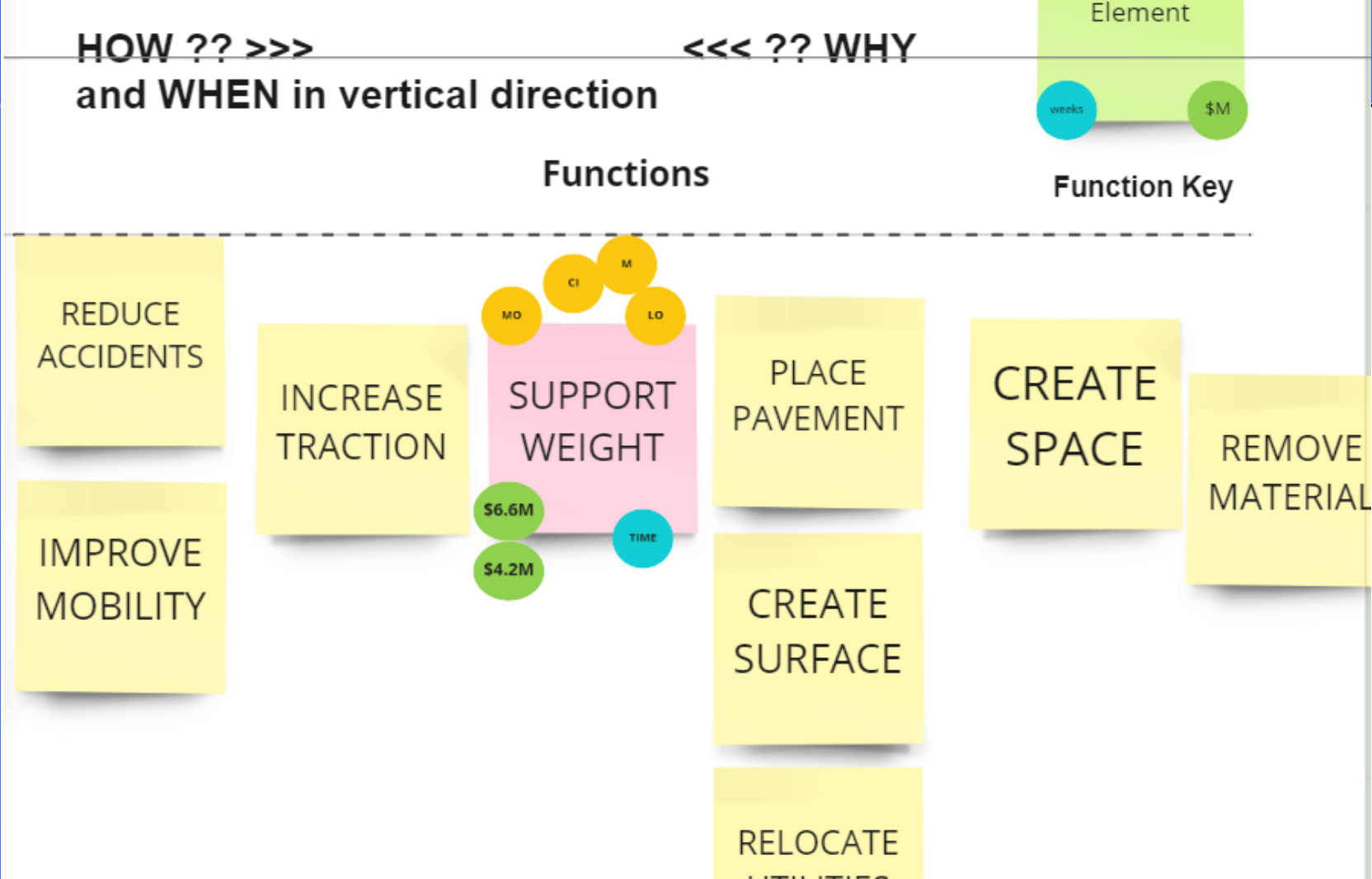
What to do BEFORE Creativity?

- **Perform Function Analysis**
- **Identify functions that affect value**
 - **Cost, Schedule, Time**
- **Select several functions to brainstorm**
- **Latest Technique: Use a “Miro” virtual white board**

Use the FAST to select



Use Miro Website To Select Functions to Brainsorm



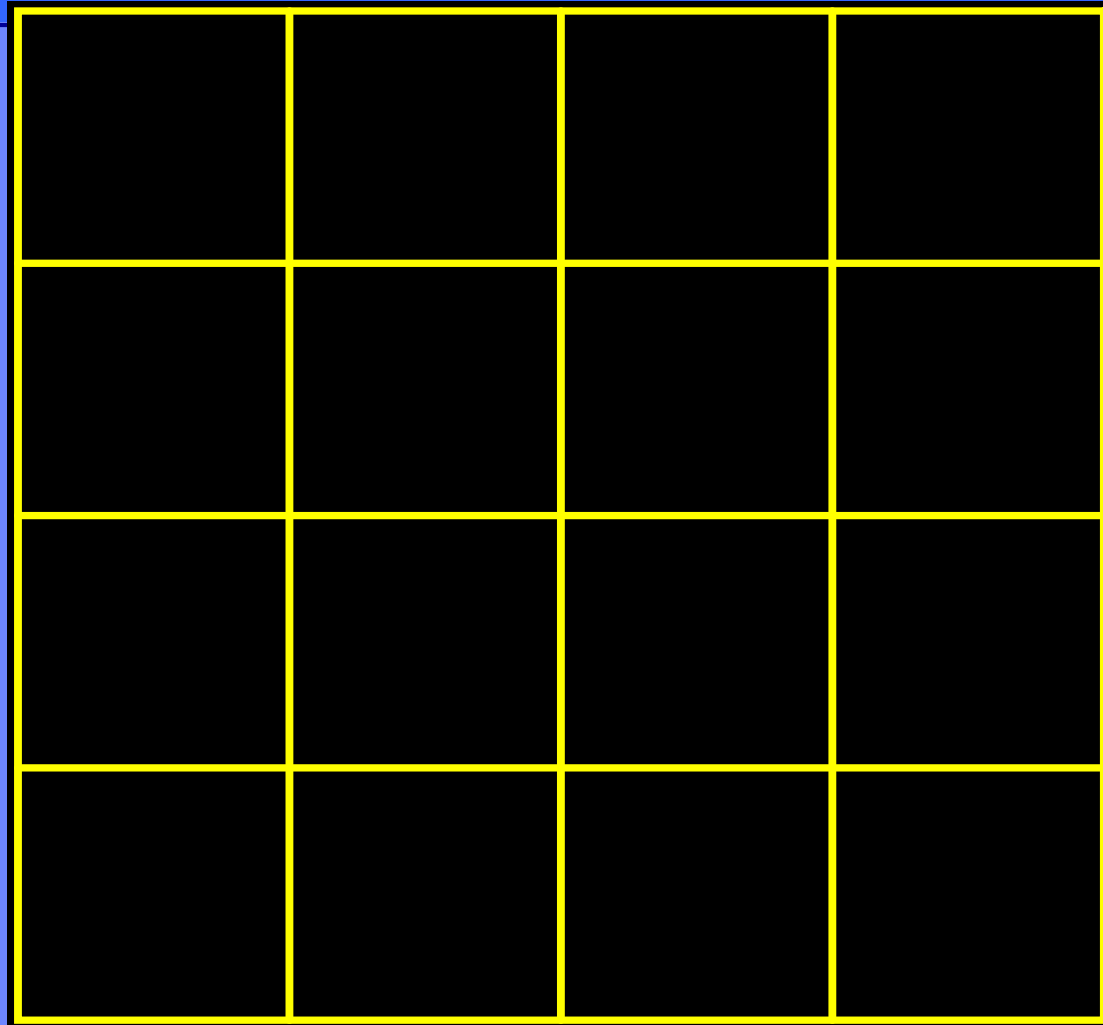
What to do DURING Creativity

- **GOAL: Generate new ideas to Perform a Function**
- **YES If, not NO BECAUSE**
 - To set the stage for the workshop
- **“Zinger” ideas**
 - They fleet through our brains as we listen to the information
 - Record a word or two to use as a trigger for brainstorming

Mind Stimulating Puzzles

- Use to spur creative ideas
- Makes people think in different ways
- Think of things from unusual perspectives
- Generate relaxed feelings
- More likely to propose ideas

How many Squares do you see?



What Do These Plates Say?



Add The Numbers

1000

1000

40

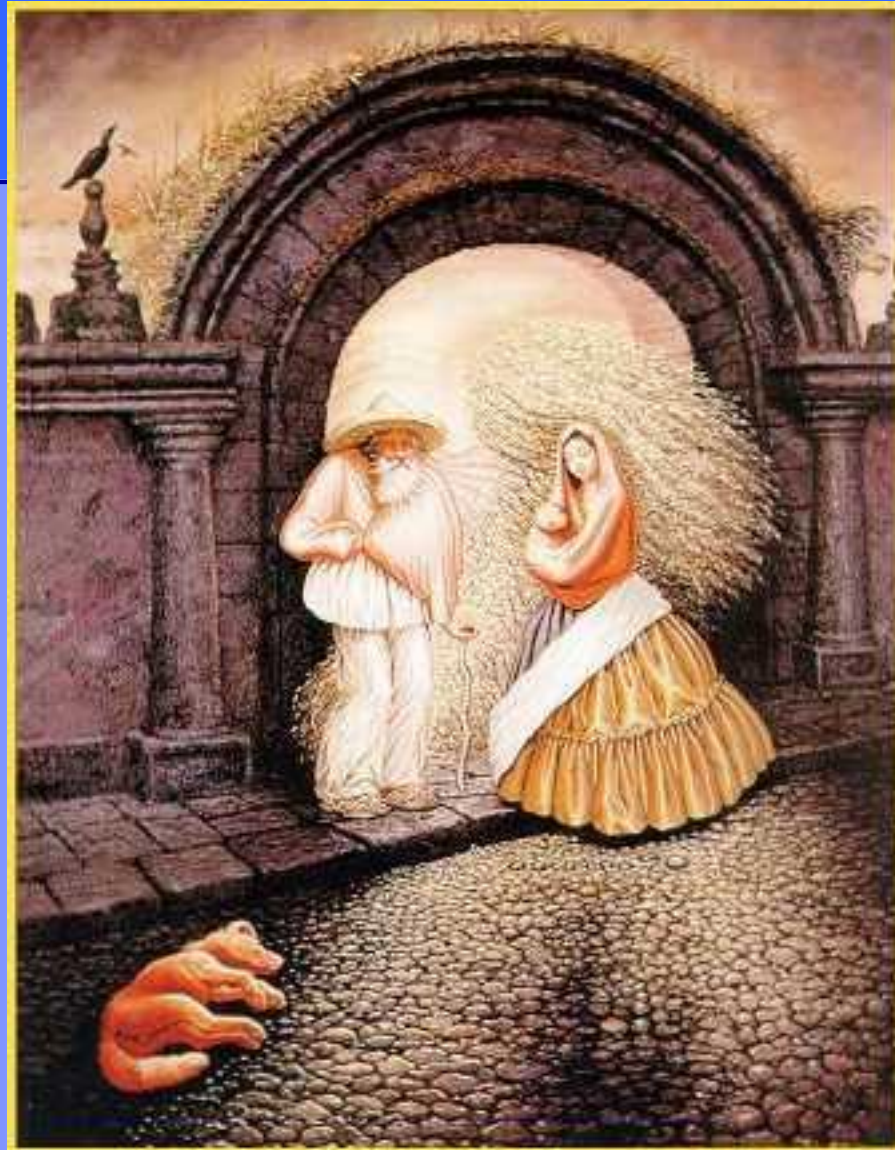
What Are the Phrases?

1. **M. + M. + N.H. + V. + C. + R.I. = N.E.**
2. **“1 B. in the H. = 2 in the B.”**
3. **8D. – 24 H. = 1 W.**
4. **3P. = 6**
5. **H. H. & M. H. at 12 = N. or M.**
6. **4 J + 4Q + 4 K = All the F. C.**
7. **S. & M. & T. & W. & T. & F. & S. are D. of the W.**
8. **A. + N. + A. F. + M. C. = A. F.**
9. **T. = L. S. S.**
10. **23Y. – 3Y = 2D**
11. **E. – 8 = Z.**
12. **Y. + 2D = T.**

How Many Fs Do You See?

**FINISHED FILES ARE THE RESULT OF
YEARS OF SCIENTIFIC STUDY
COMBINED WITH THE
EXPERIENCE OF MANY YEARS.**

How Many Faces do you See?



What Do You See?



Visual Riddles

- Used to spur creative ideas
- These are from website: **Design Crowd**
- Graphic artists compete in contests
- A word is given and the artists has to put the word into pictures



Worth 1000.com





Worth 1000.com









Worth 1000.com














Thereifixedit.com



Thereifixedit.com



Thereifixedit.com 



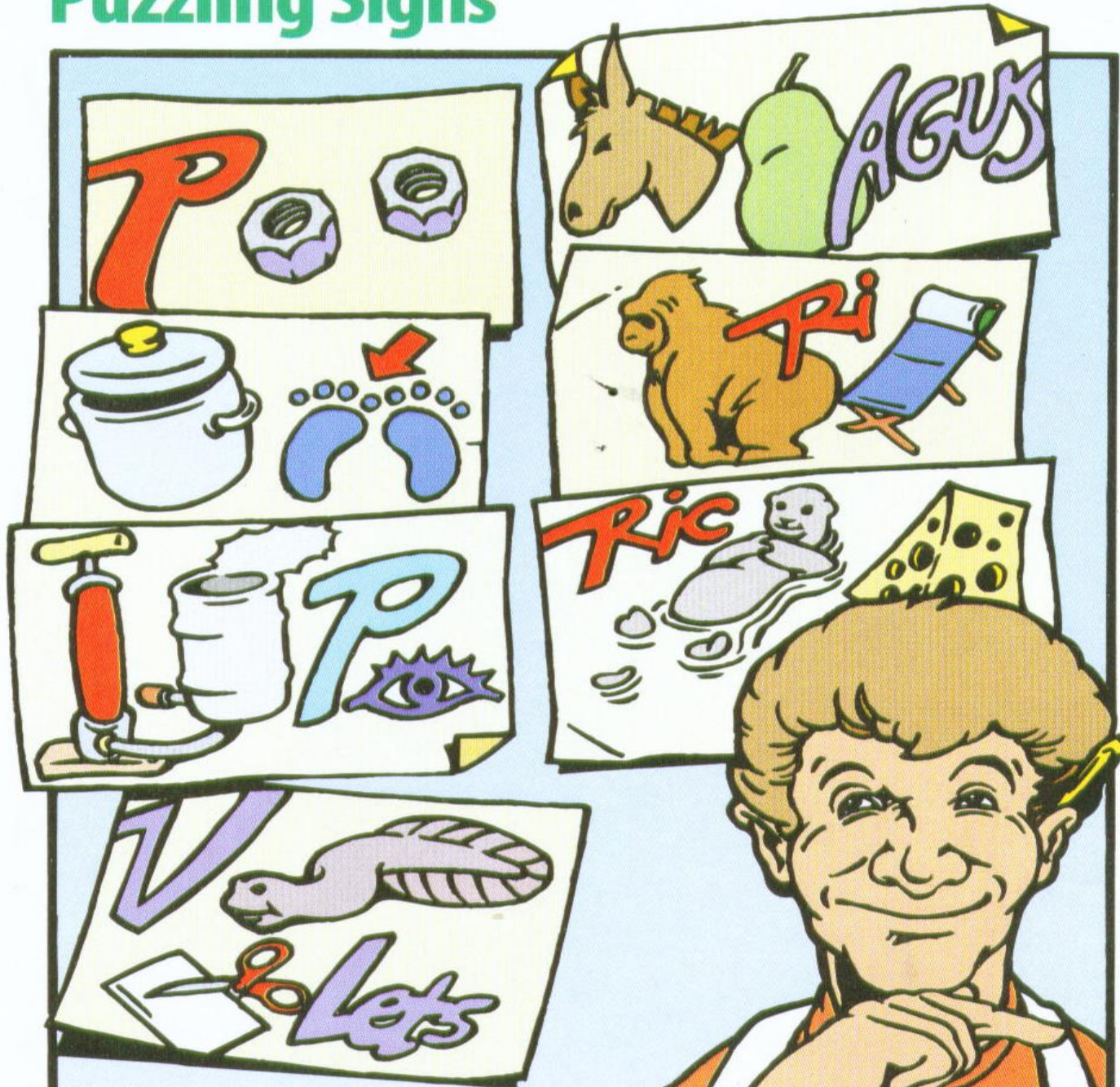




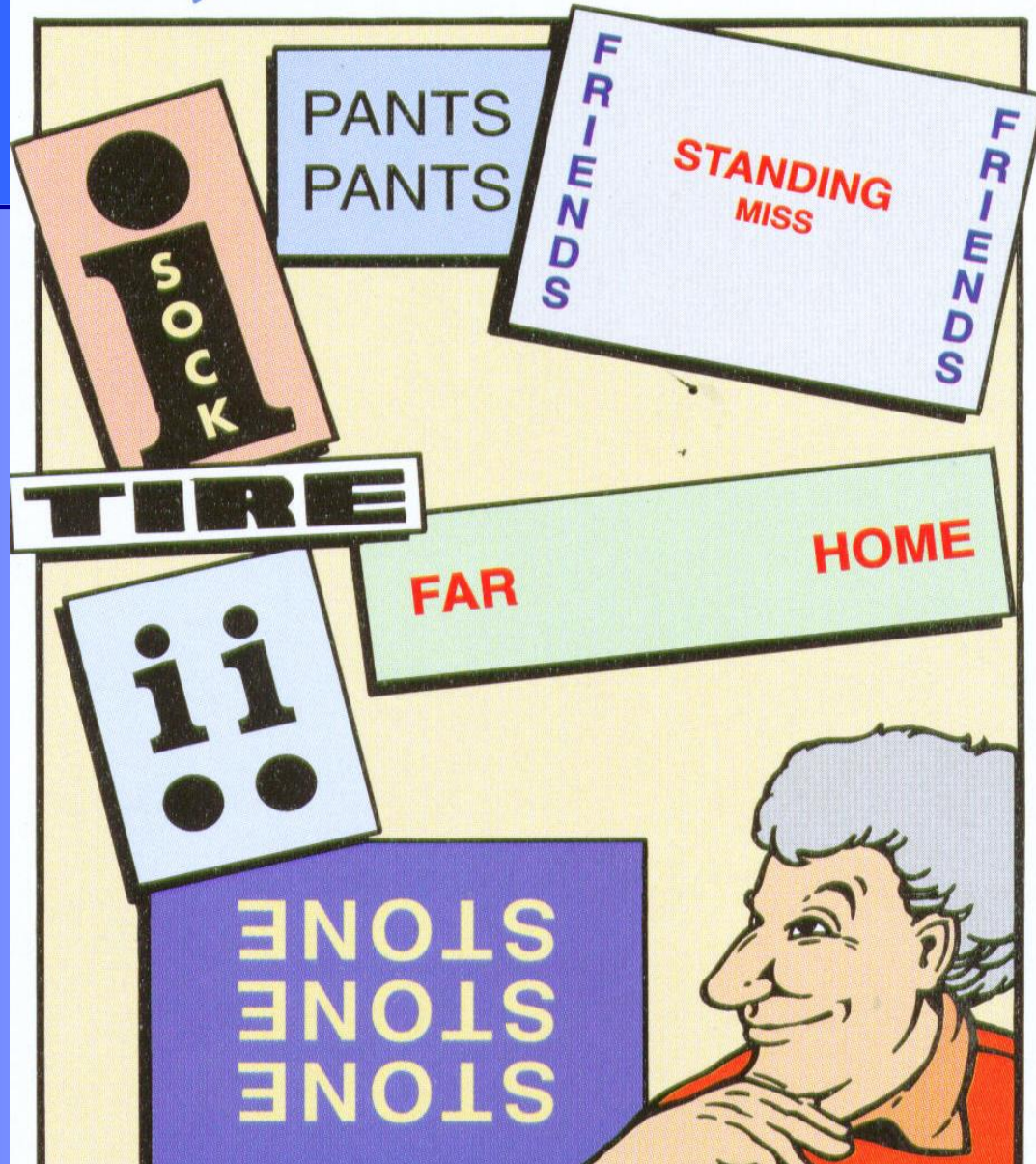




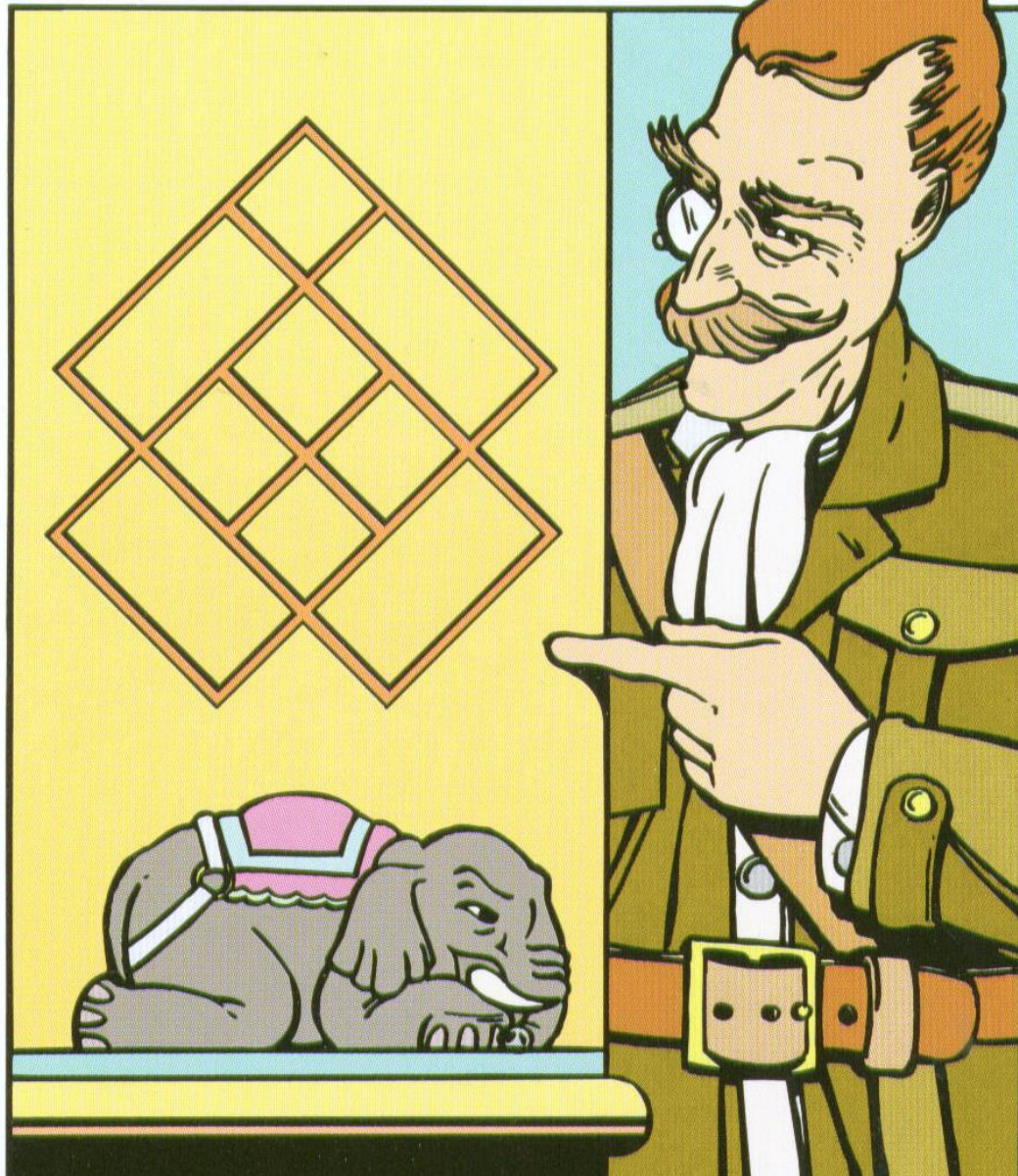
Puzzling Signs



Wordy Pictures



Punjab Square



Brainstorming Rules



- Quantity, not quality
- Suspend judgment
- Hitch hike on other ideas
- Record all ideas

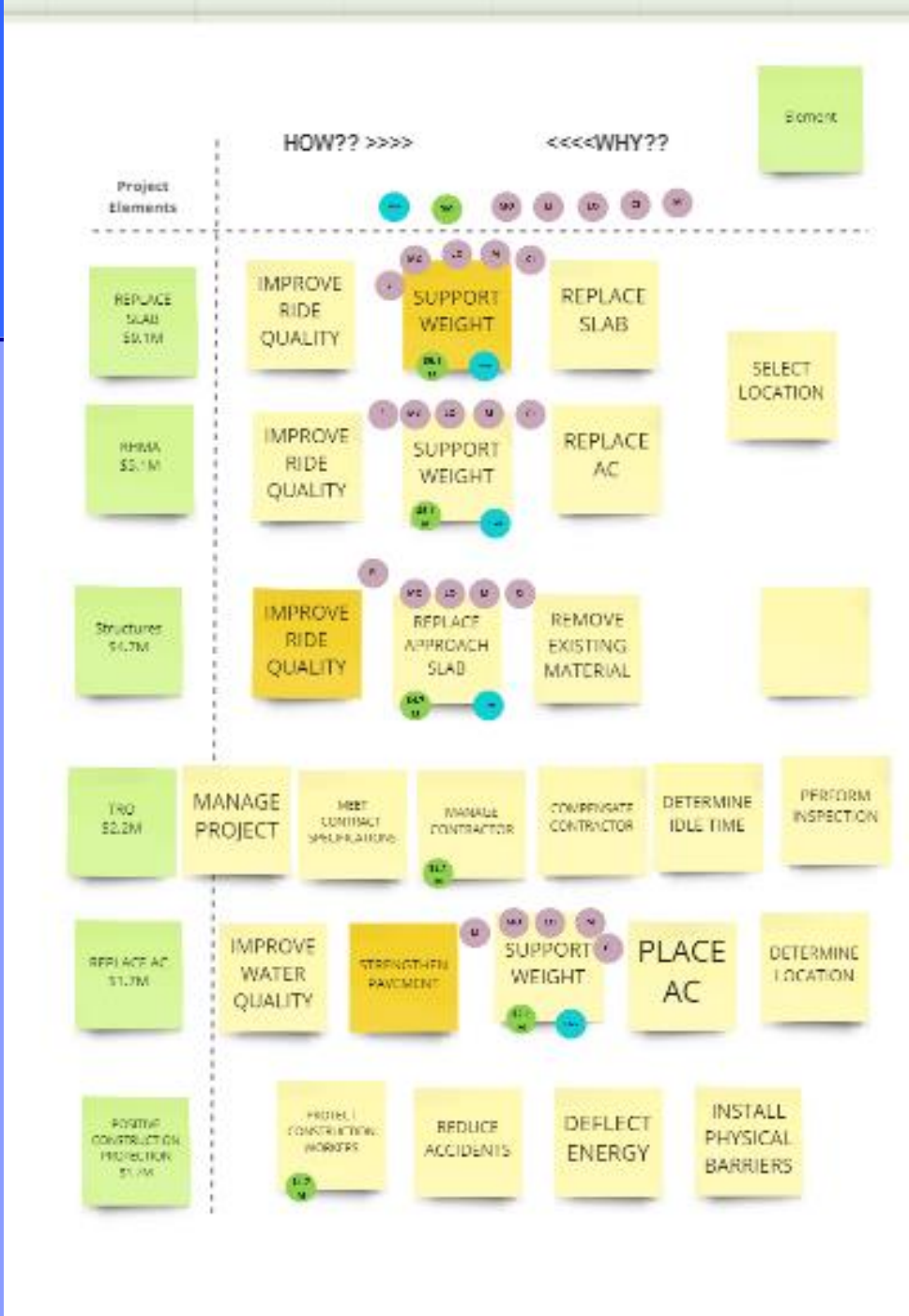
LISTING OF IDEAS

- Use flip chart paper so all can see
- Use Miro website: virtual whiteboard
- Use a numbering scheme to avoid confusion
 - Use first letter of the function's verb and first letter of functions noun
 - Example: Bypass Obstacle first idea would be BO-1, second idea = BO-2 etc.

Miro for Creativity

- Set up a Miro board
- Populate with the high cost functions
- Determine basic function of the item
- Determine HOW>>>? <<<<WHY?
- Paste a cost tab
- Paste a time tab
- Paste performance tabs
- Pick which functions to brainstorm

Miro for Function Analysis



Example of Miro Idea Listing



What to do AFTER Creativity

- What to do with your ideas.
- Goal is to EVALUATE ideas to determine which ideas could be advanced as Value Engineering proposals.

Evaluation of Ideas



Goal: Determine which ideas are worthy to advance as Value Proposals

- Will take several hours
- Consensus is needed and achieved through discussion

Evaluation Process

1. Clarify the idea
2. Eliminate nonsense ideas

- Is the idea unrealistic?
- Already being done?
- Is it a design suggestion?
 - A minor idea
 - Not enough information available

Yes = record comments and go to next idea

No = go to next evaluation step

Evaluation Process

3. Discuss value impacts

- Cost - Time
- Performance - Risk

4. Determine overall score for the idea

7 = Major Value Improvement

6 = Moderate Value Improvement

5 = Minor Value improvement

4 = Possible Value Improvement

3 = Design Consideration

2 = Moderate Value reduction

1 = Major Value reduction

DS = Design Suggestion; ABD= Already Being Done; D=Dismissed

5. Advance those ideas that show good or better value improvement

Some Evaluation Techniques

- Gut Feel Index
- Playing Cards
- Cross through the ideas on flip chart
- Impact: High, Medium, Low
- “Dot Technique”
- Value Metrics Technique

Gut Feel Index

- Pass out a Deck of Cards; 1-10, no 5
- Clarify the idea
- On count of three, show your card
- View the results
- If votes are nearly the same, OK
- If votes are scattered, discuss for clarification
- Revote
- Show average of votes next to idea
- Pick a lowest reasonable score; all ideas above this point are alternatives

Gut Feel Index Scoring

- 10 Super idea
- 9 Good idea, I'll buy in
- 8 Looks pretty good
- 7 Idea has some merit, worth exploring
- 6 I'll give the idea the benefit of doubt
- 4 Small benefits
- 3 You have not satisfied "Yes If"
- 2 Just don't like it
- 1 No way, too risky

Gut Feel Index Scoring Parameters

- 7.5 -10 Low technical risk, immediate pay-back, low investment, no testing or major evaluations. Changes not customer sensitive
- 6 – 7.4 Some technical unknowns, Good pay-back potential.
- 4.5 – 5.9 Needs engineering and development program, Need market survey, no new technology
- 2.0 – 4.4 High technical risks, potentially high payback, needs market survey

Nominal Group Technique

- List the ideas
- Pass out three scoring cards
- Write down the three best ideas, one per card
- Write idea number in upper left corner
- Look at the three cards in front of you
- Idea you like the best; a 3 goes in the lower right corner; turn card over
- Of remaining two, idea you like least gets a 1
- Last idea gets a 2
- Transfer scores to flip chart
- Show each vote score next to idea
- Total the scores

Summary: KEY POINTS

1. Key points before Creativity

- Function Analysis diagram dimensioned with performance, cost and time to select functions

2. Key points during Creativity

- Quantity, not quality, Suspend Judgment, Hitchhike on ideas, Record all ideas

3. Key points after Creativity

- Eliminate nonsense; Evaluate ideas based on performance, cost and time; develop the highly rated ideas into VE alternatives

STA4NCE

For Instance

STA4NCE

GIVE GIVE

GIVE GIVE

GET GET

GET GET

Forgive and Forget

GIVE GIVE

GIVE GIVE

GET GET

GET GET

WEADTEN

Half Hearted

WEADTEN

BELT

HITTING

Hitting Below the Belt

BELT

HITTING

AGED AGED AGED

Middle Aged

AGED AGED AGED

MOONCEON

Once in a blue Moon

MOONCE ON

14

O _ E R _ T _ O _

Painless Operation

O _ E R _ T _ O _

15

QUITE

Quite Right

QUITE

E

ANYTHING

ANYTHING

ANYTHING

ANYTHING

Ready For Anything

E

ANYTHING

ANYTHING

ANYTHING

ANYTHING

Brainstorming Done Right

- Show video
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