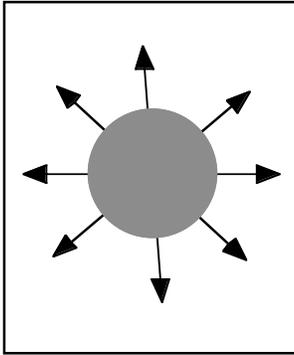


Morphological Matrix



Overview, Description, and Purpose

The Morphological Matrix is a tool for generating options. It provides a structured or systematic way to generate a large number of possibilities including many unique or highly unusual options. Using a Morphological Matrix involves identifying three to five major dimensions (or “parameters”) of a task, identifying possible attributes each parameter might have, and then exploring random combinations of attributes (selecting one attribute from each parameter for each combination). The Morphological Matrix can yield a large number of new possibilities. For example, if there are four parameters, and you list ten attributes for each parameter, there are 10^4 or 10,000 possible combinations.

The Morphological Matrix tool can be particularly useful for the following purposes, or under these conditions:

- When the group will benefit from the “stretch” of some unusual possibilities, but includes many people who are most comfortable operating with highly structured tools;
- When there are several clearly-definable dimensions or parameters for the task, and many possible options or variations within each parameter;
- To generate very quickly a large number of possibilities to test or explore;
- To produce new combinations within a well-defined task or framework.

Tips and Suggestions

These suggestions may help you to use the Morphological Matrix tool successfully.

1. Use *random* combinations of one attribute (rows) from each of the four parameters (columns); don’t limit your thinking by trying to select attributes that seem to “fit together.”
2. When you use four parameters, each having ten attributes, you can get random combinations very easily by asking the group members to use the last four digits of their telephone number or their Social Security Number. (That’s why there is a zero in the tenth column, rather than the numeral 10.)
3. Examine several possible combinations, and explore them in a playful way; it is not mandatory to choose or use only the first combination you select.

4. When using a single matrix with a group, be certain to write all the attributes in each parameter large enough so everyone can see and read them easily. Use more than one sheet of flipchart paper, if necessary.
5. There is no “magic” about using four parameters. For some tasks, you might easily identify many possible parameters. To keep the size of the matrix (and the number of possible combinations) workable, select three to five of the most important and general parameters. (If there are many more, prioritize them before you begin to use this tool.)

Steps for Using this Tool

1. State the task clearly, and identify the parameters that you will use in the matrix.
2. Select the first parameter, and enter it as the heading of the first column in the matrix.
3. Generate many, varied, and unusual attributes for that parameter, listing them in the rows under the column heading.
4. Repeat steps 2. and 3. for each parameter. List the attributes for each of the parameters in its own separate column in the Matrix.
5. Randomly select combinations, choosing one attribute from each of the parameters.
6. Write each combination and explore it. You might ask, “What is this combination? What would we have or get if we combined these attributes?”
7. Explore several possible combinations.
8. Focus your thinking by choosing one of the combinations to use, apply, or examine in greater detail.

Example

The example below illustrates a story-writing application, with four parameters (Characters in the story, Places, Goals, and Obstacles), with ten possible attributes for each parameter. Use the last four digits of your phone number to select a combination; what story ideas might be suggested for that combination?

For younger students, the Morphological Matrix can be constructed using pictures instead of words for the attributes, and the parameters can be color-coded or distinguished with symbols.

	Character	Place	Goal	Obstacle
1	President	Library	Fame	Wicked Witch
2	Little Girl	On a bus	World Peace	Snowstorm
3	Jet Pilot	Kitchen	Win a Prize	Flat Tire
4	Rock Star	Ski Slope	Solve Mystery	Lack of \$\$
5	Taxi Driver	In Bath Tub	Write a Book	Getting Lost
6	Teacher	In a Boat	Appear on TV	Miss Deadline
7	Fire Fighter	In a Cave	True Love	Thunderstorm
8	Large Dog	On Mars	Make Friends	Lack of Time
9	Barney	At a Mall	Be Stronger	Power Failure
0	A Talking Horse	At the Zoo	Solve a Problem	Computer Crashes

Learning More About the Morphological Matrix Tool

Isaksen, S. G., Dorval, K. B., & Treffinger, D. J. (1998) *Toolbox for creative problem solving: Basic tools and resources*. Williamsville, NY: Creative Problem Solving Group–Buffalo.

Treffinger, D. J. (2000). *Creative problem solver's guidebook*. Waco, TX: Prufrock Press

Treffinger, D. J., & Nassab, C. A. (1998). *Thinking tool guides*. Sarasota, FL: Center for Creative Learning.