

CREATIVE PROBLEM SOLVING

Career Development

Worksheet 1 - Problem Definition Questions

- 1 Introductory Question: Think of a problem that you need to solve. It could be a work problem, like a difficult customer problem, or a home problem, like dealing with a teenager that stays out too late. Write the basic information about your problem here.

- 2 Who do you ask about this problem?

- 3 What questions do you ask to find out where this problem came from?

- 4 Create a present state statement and a desired state statement. Refine the statements until the desired state statement clearly addresses the needs or issues identified in the present state statement.

- 5 Now start with a general statement of the problem and refine it until you reach a concrete problem statement.

- 6 Analyze the problem using the following chart.

	The Problem Is...	The Problem Is NOT...
What		
When		
Where		
Extent		

- 7 Write the final problem statement.

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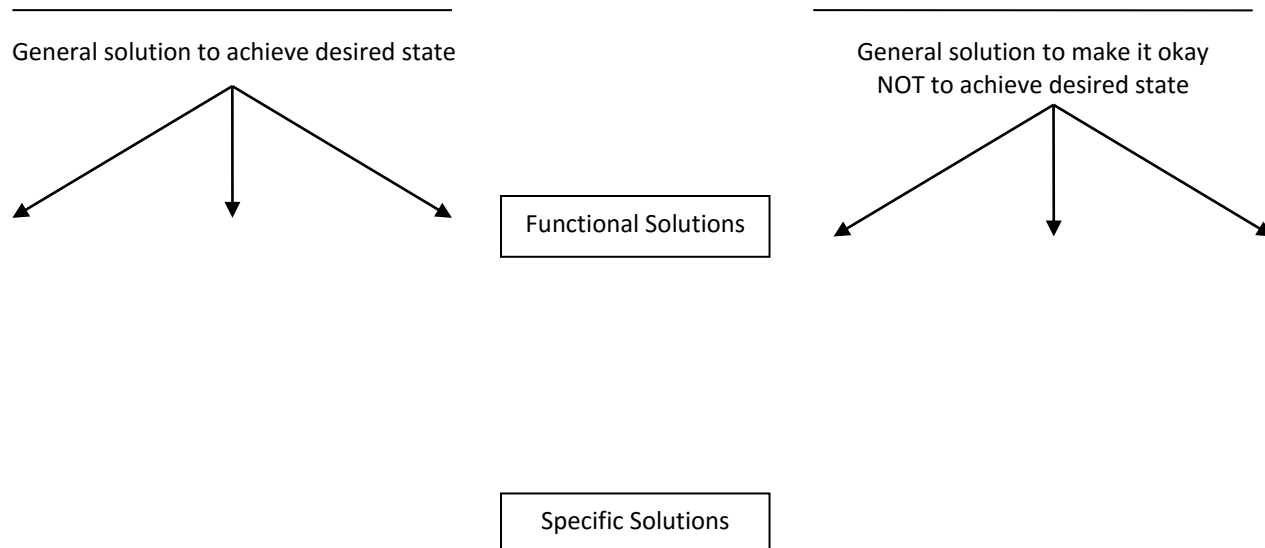
Worksheet 2 – Generating Solutions

BRAINWRITING

Problem Statement
(generated in worksheet 1):

DUNKER DIAGRAM

Present State and Desired State
(generated in worksheet 1):



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THE SIX THINKING HATS

The Six Thinking Hat methodology (*Dr. Edward de Bono*) allows a deliberate focusing during problem solving sessions, with an agreed-upon sequence and time limit to each hat. It ensures that everyone in the group is focused on a particular approach at the same time, rather than having one person reacting emotionally (red hat) while others are being objective (white hat) and still another is wearing the black hat to form critical judgments of ideas.



White hat – Facts and Information: This hat includes Information collected or identified as missing.



Red Hat – Feelings and Emotion: This hat includes feelings, including gut reactions to ideas or items identified in another area.



Black Hat – Critical Judgment: This hat includes details about obstacles to solving the problem or other negative connotations about an item or idea. Since people are naturally critical, it is important to limit black hat thinking to its appropriate role.



Yellow Hat – Positive Judgment: This hat is the opposite of the black hat. It includes details about the benefits of an idea or issue, or thoughts about favoring an idea. It is still critical thinking and judgment, as opposed to blind optimism.



Green Hat – Alternatives and Learning: This hat concerns ideas about new possibilities and thinking about implications rather than judgments. Green hat thinking covers the full spectrum of creativity.



Blue Hat – The Big Picture: This hat serves as the facilitator of the group thinking process. This hat can be used to set objectives both for the problem solving process and the thinking session itself.

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MORPHOLOGICAL MATRIX –

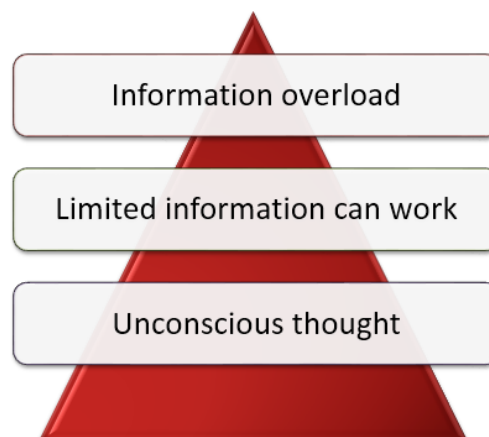
The Morphological Matrix is a grid of different attributes about the problem which can help generate random combinations to arrive at possible solutions. It is a method of listing examples of different attributes or issues to an item (or problem), and randomly combining the different examples to form a solution. Depending on the number of issues or attributes identified, there can be quite a large number of possible combinations.

1. Enter a specific attribute or issue about the item or problem at the top of each column.
2. Then for each column, generate a list of examples for that attribute.

Once there are many different ideas in the columns, the solutions can be combined strategically or randomly. While some combinations naturally are incompatible, problem solvers should not rule out ideas until they reach the analysis phase of the problem-solving process.

THE BLINK METHOD

The Blink Method offers the power and challenges of quick, unconscious decisions and a way to “thin-slice,” or coming to a conclusion with limited information. Take into consideration biases toward: likes and dislikes, stereotypes, and intuitive judgment.



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SIX STEPS OF CREATIVE PROBLEM SOLVING PROCESS

The Creative Problem Solving Process uses six major steps to implement solutions to almost any kind of problem.

The steps are:

1. **Information Gathering**, or understanding more about the problem before proceeding
2. **Problem Definition**, or making sure you understand the correct problem before proceeding
3. **Generating Possible Solutions** using various tools
4. **Analyzing Possible Solutions**, or determining the effectiveness of possible solutions before proceeding
5. **Selecting the Best Solution(s)**
6. **Planning the Next Course of Action** (Next Steps), or implementing the solution(s)

TYPES OF INFORMATION

There are many different types of information. The following list includes information you will need to consider when beginning the creative problem solving process:

- Fact
- Opinion
- Opinionated Fact
- Concept
- Assumption
- Procedure
- Process
- Principle

IDENTIFYING MENTAL BLOCKS

There are many types of mental blocks. Most blocks to problem-solving fit into the following categories.

- **Emotions:** Emotional blocks can include anything from a fear of risk taking to a tendency to judge or approach the problem with a negative attitude.
- **Distractions:** Too much information, irrelevant information, or environmental distractions can prevent a productive brainstorming session.
- **Assumptions:** If problem solvers assume there is only one correct solution, they will be unable to generate additional ideas. Assumptions also become mental blocks from stereotypes or perceived boundaries where none exist.
- **Culture:** Culture defines the way we live and limits the ideas we may generate or consider. However, not every culture is the same. Sometimes the cultural blocks are unnecessary, and sometimes we do not consider cultural limitations when we should.
- **Communication difficulties:** If we cannot communicate our ideas in some way – speaking, writing, or pictures – these communication difficulties can block our progress in generating ideas.

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GATHERING INFORMATION

Here are some of the ways you can collect information about a problem:

- ✓ Conduct interviews.
- ✓ Identify and study statistics.
- ✓ Send questionnaires out to employees, customers, or other people concerned with the problem.
- ✓ Conduct technical experiments.
- ✓ Observe the procedures or processes in question first hand.
- ✓ Create focus groups to discuss the problem.

DETERMINING WHERE THE PROBLEM ORIGINATED

Successful problem solvers get to the root of the problem by interviewing or questioning anyone who might know something useful about the problem. Ask questions about the problem, including questions that:

- Clarify the situation
- Challenge assumptions about the problem
- Determine possible reasons and evidence
- Explore different perspectives concerning the problem
- Ask more about the original question

If you did not define the problem, find out who did. Think about that person's motivations. Challenge their assumptions to dig deeper into the problem.

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