



Name: _____

Date: _____

THE CREATIVE MINDSET: MASTERING THE SIX SKILLS THAT EMPOWER INNOVATION WORKBOOK

The Creative Mindset introduces six essential creative thinking skills that can be easily mastered with limited practice and remembered as the mnemonic acronym **CREATE: CLARIFY, REPLICATE, ELABORATE, ASSOCIATE, TRANSLATE, and EVALUATE.**

CLARIFY: GETTING THE CHALLENGE RIGHT

Business leaders understand that there can be no effective creative solution if it doesn't solve the problem. Coming up with a solution without understanding the challenge is akin to having an answer without knowing the question. The ability to investigate, identify, and articulate a problem is the paramount creativity skill. This is what the first step of the Creative Mindset, CLARIFY, is all about. We can't problem-solve if we don't know what the problem is. Think about your innovation challenge or a problem you are trying to solve. Walk through the problem using the steps here:

IDENTIFY YOUR CREATIVE INITIATIVE

I. CLARIFY YOUR PROJECT

What is the challenge or opportunity?

Is it real?

Why am I working on it?

Is it worth doing?

What do I hope to attain, accomplish, gain, or resolve?

Can I really succeed?

2. CLARIFY YOUR INVOLVEMENT

Will this project make a difference in my life?

Will I enjoy working on this project?

Will it matter five years from now?

Does this project have a high return for my effort?

Does this project have a real deadline?

Does this project fulfill my values?

3. LOOK AT YOUR INFORMATION

WHAT DO YOU KNOW NOW?

Facts:

Observations:

Interpretation:

Impressions:

Experiments:

Testimony:

Beliefs:

What do you still need to know?

How will you come to know it?

How do you define the challenge as of now?

4. CRAFT A CLEAR CHALLENGE STATEMENT

Who:

Will do what:

Where:

Why:

How:

REPLICATE: MIMICKING AND REAPPLYING IDEAS

Replication is the most rudimentary form of creativity. It embodies the accessibility and simplicity of the Creative Mindset: it doesn't ask us to do extraordinary things; it merely asks us to move one ordinary thing over to another unexpected but nevertheless similarly ordinary thing. There are three fundamental ways to REPLICATE: going on field trips, making new friends, and copying nature.



GO ON FIELD TRIPS

We all can learn this habit of paying attention to the things we normally don't when we go to our regular places. When you go to your regular coffee shop, notice the demographics of the customers, see whether there's anything different about the menu boards or whether the tables and chairs are arranged in a particular way, and so on. Imagine yourself as a tourist visiting the place for the first time. What does the place remind you of? Do you have any insights? Jot down your observations in a notebook, record your thoughts on your phone, or use the worksheet here. Once a week, go over those notes or voice recordings and synthesize and organize them.

GO ON FIELD TRIPS

FIELD TRIP NO. 1

Date:

Where:

Thoughts:

FIELD TRIP NO. 2

Date:

Where:

Thoughts:

FIELD TRIP NO. 3

Date:

Where:

Thoughts:



MAKE NEW FRIENDS

Think about a new person to whom you were recently introduced. Or introduce a new topic of conversation when you're with an old friend, and see where that conversation will take you. Reading articles in different news outlets than you're used to can also introduce a new way of thinking. Make notes of your conversation with a new friend using this worksheet and consolidate your thoughts once a week.

MAKE NEW FRIENDS

FRIEND NO. 1

Name:

Where:

Why:

Thoughts:

FRIEND NO. 2

Name:

Where:

Why:

Thoughts:

FRIEND NO. 3

Name:

Where:

Why:

Thoughts:

COPY NATURE

Observing something in the natural world and then modifying it into a human-made creation is called *biomimicry*. Think of it as an accelerated form of evolution—and the ultimate form of replication. There are several simple steps you can undertake to copy nature. The idea is to view the familiar object or concept in a different way, based on what you see. The trick is to let your mind guide you and to not try too hard to fit the attributes together.

1. Pick something in nature to copy from:
 - a. Plant or animal
 - b. Geological formation (river, mountain, valley, etc.)
 - c. Natural process (water turning into ice, etc.)
2. Deconstruct the object you're redesigning into its attributes and functions.
3. Now do the same with the thing found in nature.
4. Mark the attributes that you find relevant, and think about how these might change the design of your object.
5. Using a pencil, integrate these attributes and functions found in nature with those of your object. Do several renderings.
6. What improvements or innovation can be integrated into this object?

Practice biomimicry for a few days. Pick an object you want to redesign and observe things around you that you can use as sources of ideas. Use this worksheet to redesign an object.

OBJECT TO REDESIGN

I. PICK SOMETHING FROM NATURE

2. DECONSTRUCT THE OBJECT

Attribute 1:

Attribute 2:

Attribute 3:

Attribute 4:

Attribute 5:

3. DECONSTRUCT THE THING FROM NATURE

Attribute 1:

Attribute 2:

Attribute 3:

Attribute 4:

Attribute 5:

4. PICK RELEVANT ATTRIBUTES AND TRANSLATE THEM

NATURE ATTRIBUTES	TRANSLATED ATTRIBUTES
Attribute 1:	Attribute 1:
Attribute 2:	Attribute 2:
Attribute 3:	Attribute 3:

5. INTEGRATE THE ATTRIBUTES AND CREATE SOME MOCK-UPS

6. WHAT IMPROVEMENTS OR INNOVATION CAN BE INTEGRATED INTO THIS OBJECT?

ELABORATE: MULTIPLYING IDEAS BY ADDING NEW ONES

Elaboration illuminates the arbitrary way in which we have organized our language and our thinking. By connecting ideas that are not typically associated, we can create new ones as if by magic. Even the most obvious associations make us aware of our own mental processes. Elaboration is something your brain does almost automatically. The key is not to push connections, but rather to simply allow them to happen. Elaboration is all about making faster and better connections. This approach requires working through a lot of trash ideas to get to the few treasures. There are three fundamental ways to elaborate: experiment with random words, use SCAMPER questions, and trying on the six thinking hats.



RANDOM WORDS

Pick up a dictionary—or any book, for that matter—and open it up and point to a random word. Make a list of adjectives, verbs, or adverbs that describe this word. Connect your challenge to items in this list. You don’t need to use all. Sometimes a more difficult association produces the most creative idea. Random words take one idea that typically doesn’t go with another and let your mind connect them. The key is to relax and let your mind make those associations for you.

CHALLENGE

RANDOM WORDS	CONNECT RANDOM WORDS TO CHALLENGE



SCAMPER TECHNIQUE

This technique works on the same basic principles as random words, but is more focused on action verbs that mobilize ideas. The acronym SCAMPER poses six questions: What can we...Substitute? Combine? Adapt? Magnify? Put to other uses? Eliminate? Reverse? By asking these simple questions, you can connect ideas and actions in new ways to easily produce useful variations.

SCAMPER

Substitute:

Who else instead? What else instead? Other ingredients? Other material? Other process? Other power? Other place?

Combine:

How about a blend, an alloy assortment, an ensemble? Combine unit? Combine purposes? Combine appeals? Combine ideas?

Adapt:

What else is like this? What other idea does this suggest? Is there a past offer similar to this? What can I copy? Whom do I emulate?

Modify or Magnify:

New twist? Change meaning, color, motion, sound, odor, form, shape? Other changes? What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Extra ingredient? Duplicate? Multiply? Exaggerate?

Put to Other Uses:

New ways to use as is? Other uses if modified?

Eliminate or Minify:

What to subtract? Smaller? Condensed? Miniature? Shorter? Lighter? Omit? Streamline? Split up? Understate?

Reverse or Rearrange:

Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse role? Change shoes? Turn tables? Turn the other cheek? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

Looking now at your challenge, run it through all the elements in SCAMPER. Do not worry if you think that the idea doesn't fit exactly into the prompts. Just write them down.

YOUR CHALLENGE

SCAMPER

Substitute:

Combine:

Adapt:

Modify or Magnify:

Put to Other Uses:

Eliminate or Minify:

Reverse or Rearrange:



THINKING HATS

The six thinking hats represent different types of thinking and roles played by group members: Objectives, Information, Emotions, Judgment, Optimism, and Creativity.

1. Get six hats of different colors or shapes. Using real hats really brings the technique to life, so don't just pretend you have a hat. Have fun and find unique hats that you like.
 - a. **White:** data, information, and facts
 - b. **Red:** intuition, emotion, and passion
 - c. **Black:** judgment, critical thinking, and playing devil's advocate
 - d. **Yellow:** possibility, cheerleading, and resources
 - e. **Green:** new, alternative options, and revolutionary
 - f. **Blue:** process, structure, and system
2. Convene a group of six colleagues.
3. Have your colleagues choose different thinking hats and assume the concepts represented by the hats as their temporary identities. The closer the concepts are to the colleagues' natural tendencies, the better they will be at playing those roles, but it may be fun to mix things up as well.
4. Start a discussion of your challenge and have your colleagues take turns discussing different aspects of the challenge from their perspectives. Take copious notes.
5. After a while, ask your colleagues to take off their hats and discuss your challenge as a group. Weigh all these ideas and options against one another. Throw some out. Combine some to create hybrid solutions.
6. If you cannot convene a group, you should put on one hat at a time and try to embody that concept while you're wearing the hat. Let out your inner actor, even if it's just for this exercise.

THINKING HATS



THINKING HAT: WHITE

THINGS TO THINK ABOUT: DATA, INFORMATION, FACTS

Thoughts:



THINKING HAT: RED

THINGS TO THINK ABOUT: INTUITION, EMOTION, PASSION

Thoughts:

**THINKING HAT: BLACK****THINGS TO THINK ABOUT:** JUDGMENT, CRITICAL THINKING, DEVIL'S ADVOCATE**Thoughts:****THINKING HAT: YELLOW****THINGS TO THINK ABOUT:** POSSIBILITIES, CHEERLEADING, RESOURCES**Thoughts:****THINKING HAT: GREEN****THINGS TO THINK ABOUT:** NEW, ALTERNATIVE OPTIONS, REVOLUTIONARY**Thoughts:****THINKING HAT: BLUE****THINGS TO THINK ABOUT:** PROCESS, STRUCTURE, SYSTEM**Thoughts:**

ASSOCIATE: CONNECTING IDEAS WITH ANALOGIES

Analogies can transfer information we believe we understand in one domain, the source, to help resolve a challenge in an unfamiliar area, the target. Using analogies and metaphors is easy for some people, but can be difficult for others. The three techniques described in this section take very different approaches. If you find that one is harder for you to use, that's normal. You just need to practice more to get comfortable with it. Here are three ways to ASSOCIATE.

ADAPTIVE REASONING

Your perspective or relative relationship to a problem can change or evolve through the use of analogies. Ask yourself how your given problem, initiative, or project is like something else. There are different types of analogies that frame different types of connections:

- Direct analogies: How is life like a rug?
- Personal analogies: How is my life like a bouncing ball?
- Symbolic analogies: How is life like spring turning into summer?
- Fantasy analogies: How would life improve if everyone told the truth?





IMAGINARY FRIENDS

We all have heroes of the imagination—poets and scientists, philosophers and leaders, living and deceased. If we presented them with our challenge or opportunity, what would they say? Put together your Board of Advisors based on your challenge. You should not have too many people on your board; somewhere between four and eight is plenty. Just verify that they have different perspectives, and make sure you pick people whom you respect and whose advice you would follow. You can also use different boards of advisors for different types of problems (personal versus professional).

CHALLENGE

BOARD OF ADVISORS

ADVISOR NO. 1

Name:

Problem Interpretation:

Most Important Issues:

Possible Solutions:

ADVISOR NO. 2

Name:

Problem Interpretation:

Most Important Issues:

Possible Solutions:

ADVISOR NO. 3

Name:

Problem Interpretation:

Most Important Issues:

Possible Solutions:

ADVISOR NO. 4

Name:

Problem Interpretation:

Most Important Issues:

Possible Solutions:

ADVISOR NO. 5

Name:

Problem Interpretation:

Most Important Issues:

Possible Solutions:

ADVISOR NO. 6**Name:****Problem Interpretation:****Most Important Issues:****Possible Solutions:****ADVISOR NO. 7****Name:****Problem Interpretation:****Most Important Issues:****Possible Solutions:****ADVISOR NO. 8****Name:****Problem Interpretation:****Most Important Issues:****Possible Solutions:**

SYNECTICS

Synectics is not the easiest technique to use, but it can be very effective in “resetting” your thoughts about your current challenge. By thinking about another problem that is not related to the original one, your mind will be open to other possible ways to approach the original problem. Here are the steps to using this technique:

1. Define your challenge using precise words.
2. Conduct a root cause analysis. Identify the possible root causes of the problem and select one that you think contributes the most to the problem.
3. Go on metaphorical excursions. Explore how the problem is like something typically unrelated:
 - a. Think of something else that you can compare to the problem—an analogy or metaphor. Pick something that you know a lot about so you can use a lot of details for the comparison. Think of three different types of analogy:
 - i. Concrete: How is the root cause like the sun?
 - ii. Symbolic: How is the root cause like listening to music?
 - iii. Process: How is the root cause like cooking?
 - b. Define the important characteristics of the metaphor: processes, attributes, or components that explain the metaphor.
4. Force-fit the metaphor into the root cause. Apply the attributes and functions of the metaphor back to the selected root cause:
 - a. For each of the important characteristics of the metaphor, consider how you can add it to the root cause of your problem or otherwise implement it. Don’t worry about how each characteristic fits together for now.
 - b. Repeat until you successfully transfer/translate all of the identified characteristics.
5. Synthesize a possible solution. Integrate the implementations or translations of all those characteristics into a coherent solution to the root cause of your problem. You may need to eliminate and change some aspects to create a solution that makes sense. However, remember that your objective here is to find creative solutions, so do not eliminate components just because they seem odd.

I. DEFINE YOUR CHALLENGE

2. CONDUCT A ROOT CAUSE ANALYSIS

Possible cause no. 1:	Select one root cause to work on:
Possible cause no. 2:	
Possible cause no. 3:	
Possible cause no. 4:	

3. GO ON A METAPHORICAL EXCURSION

Pick a metaphor:

Characteristics of the metaphor:

4. FORCE-FIT

CHARACTERISTICS OF THE METAPHOR

TRANSLATE THE CHARACTERISTICS INTO VARIOUS ASPECTS OF POSSIBLE SOLUTIONS

Characteristics of the metaphor:

Translating characteristic to root cause:

Characteristics of the metaphor:

Translating characteristic to root cause:

Characteristics of the metaphor:

Translating characteristic to root cause:

Characteristics of the metaphor:

Translating characteristic to root cause:

5. SYNTHESIZE POSSIBLE SOLUTIONS

TRANSLATE: CREATING STORIES FROM IDEAS

Narratives can powerfully bring disparate groups together—which is why they’re a distinctive part of the human condition—but they can also alienate others who aren’t versed in the language of these narratives. If you create a story that crosses boundaries and has a universal appeal, your innovation will do the same. Successful innovators are masters of the TRANSLATE skill. They can translate their ideas and visions into recognizable stories that inspire, attract, and unify others.

There is likely a better version of the story you already know and tell about your organization. Play around with the characters and plot not just for your audience but also for yourself. The ability to see ourselves as different people in different settings is one of the most powerful kinds of creativity we can have. You can improve your ability to tell stories through storyboarding, morphologies, and scenario making.



STORYBOARDING

The object of storyboards is to create a vision of how things intertwine. They should be a work in progress so that everyone can participate. Telling and retelling a story in a group is still an incredibly effective way to create new ideas. Here are a few simple steps to telling your story:

1. Form a group consisting of five to eight people and choose a leader. Select people who have diverse perspectives, but also those who are deeply interested in the topic.
2. As a group, define the problem and create a topic header at the top of the storyboard.
3. Think of facts, information, or narrative that can strongly support the topic header. Create other headers and subtopics for the information you’re trying to tell the story about.
4. Create the storyboards. Review the story by looking at the entire set of storyboards. Read the story out loud to the group to see whether it makes sense.
5. Identify the best ideas and different narrative arcs.
6. Revise your storyboards.

2. TOPIC HEADER

3. HEADERS AND SUBTOPICS

4. STORYBOARD



MORPHOLOGIES

Think of morphologies as building blocks that you can move around and bring together in new ways. By breaking down a story into characters and actions, you can reconstruct a wide range of possible solutions. Similarly, by looking at a product or experience as a collection of functions and attributes in a matrix, you can assemble a series of new combinations—uses, colors, size, flavors, and so on.

To use morphology, you need to consider the underlying structure of your problem and organize different elements into categories that make sense. Here are some steps you should follow:

1. Define the problem.
2. Break down the problem statement into its components or categories.
3. List all options for each component. Go wild with all the options, not just ones that are regularly associated with your particular problem.
4. Combine different options from the various components and see what works.

1. CHALLENGE

2. CATEGORIES

Category 1:	Category 2:	Category 3:	Category 4:
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3. OPTIONS FOR EACH CATEGORY

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4. CATEGORY COMBINATIONS

SCENARIO MAKING

Scenario making is commonly used in strategic planning for large and complex organizations where the range of variability is great, in an attempt to predict potential outcomes of situations that are multilayered and fluid. There are a few steps you can follow to create some scenarios for the future:

1. Define the problem clearly and the timeline that you are concerned about (Five to ten years? Three years?)
2. Identify key drivers or indicators that are the most relevant for your problem/challenge in the time frame that you have defined. For instance, what are the big shifts in the relevant trends, economic conditions, politics, and technology platform?
3. Create the best scenario and the worst possible scenario. Identify a couple more likely scenarios.

1. CHALLENGE

2. DRIVERS

3. SCENARIOS

	Scenario A:	Scenario B:	Scenario C:	Scenario D:

- Evaluate your scenarios in terms of their impact and probability. Identify the ones with the highest impact and probability.

<div> <div>Low</div> <div>High</div> <div>IMPACT</div> </div>	WATCH IT	PLAN ON IT	PLAN ON IT
	FORGET IT	WATCH IT	PLAN ON IT
	FORGET IT	FORGET IT	WATCH IT
	<div> <div>Low</div> <div>High</div> <div>PROBABILITY</div> </div>		

4. IMPACT AND PROBABILITY

	Scenario A:	Scenario B:	Scenario C:	Scenario D:
IMPACT				
PROBABILITY				
TO DO				

EVALUATE: SELECTING THE BEST IDEAS

The Creative Mindset often starts out with one person's unlikely, outside-the-box idea, but fully realizing its magic requires the support of a team and the willingness of others to experiment. This is a magic that often doesn't pay off and that can sometimes be too risky to try out. You'll need to enlist the help of your team to evaluate the risk and decide whether the idea is worth pursuing. This is the stage when we EVALUATE, or select the best ideas.

Now, evaluate your ideas using the four-step process described above. You can use the worksheets provided here. Let's start by listing your ideas.

CHALLENGE

IDEA

1	
2	
3	
4	
5	
6	

1. Evaluate the ideas using divergent criteria:

- **Influence:** Do we have the ability to move the market with this idea? Can we get the organization to buy in? Can we get resources from our leaders?
- **Interest:** Do we really care about this idea? Do customers care about this idea? Is this idea interesting enough to warrant dropping some current projects?
- **Imagination:** Is this really a game changer? Does this stretch our current capabilities? Is this idea a wow?
- **Urgency:** Is this a must-do idea? Why haven't we done it before? What happens if we don't do it?
- **Immediacy:** What is the window of opportunity for this idea? Can we move fast enough to make this idea profitable?
- **Direction:** Does this idea advance our strategy? Does this idea take us to new markets? Does this idea create new capabilities?

I. DIVERGENT CRITERIA

IDEA	INFLUENCE	INTEREST	IMAGINATION	URGENCY	IMMEDIACY	DIRECTIONS
1						
2						
3						
4						
5						
6						

2. Evaluate the ideas using convergent criteria:

- **Cost:** Are we within budget in developing this idea? Is there cost saving for the future? Have we considered marketing costs and others in our projections? Are there opportunities for us to share some of the costs (manufacturing, promotion, sales force, etc.) with other existing products? Do the benefits afforded by this idea outweigh the cost?
- **Time:** What is our time to production for testing? How about to manufacture this in large scale? What are the trade-offs between speed of manufacturing and quality of products? What do we need to sacrifice to accelerate production? What are the deadlines that we need to consider to fit the development of this idea into our operating rhythm? How should we allocate resources to this idea long term?
- **Feasibility:** Is this idea executable? Can we operationalize it within our current system and structure? Do we need resources that we do not currently have? Do we have evidence that this idea works?
- **Acceptability:** Can this idea be explained simply? Or does it need an elaborate explanation? Will this idea be compatible with the target market's lifestyle? Or are we asking people to change their behavior with this idea? Is this idea consistent with prevailing values and attitudes? Can we have leaders and others endorse the idea? Are there unacceptable side effects?
- **Usefulness:** Is there a real need for this idea? Or are there existing products/solutions that already fulfill this need? How large is this need? What are the short-term and long-term benefits of this idea? Can this idea be useful to other target markets? Will this idea bring us profit? What is the market size?

2. CONVERGENT CRITERIA

IDEA	COST	TIME	FEASIBILITY	ACCEPTABILITY	USEFULNESS
1					
2					
3					
4					
5					
6					

3. Evaluate the positive and negative aspects of each idea.

3. POSITIVE AND NEGATIVE ASPECTS

IDEA	POSITIVES	NEGATIVES	INTERESTING POINTS
1			
2			
3			
4			
5			
6			

4. Narrow down your ideas to the very best. You want to choose ideas that have big impact and are readily executable. Use the GE Work-Out evaluation grid to consider the efforts you need to put in compared to the payoff (Ulrich, Kerr, & Ashkenas, 2002). Eliminate everything in the Time-Wasters category. Select only one from the Special Cases category. Pay the most attention to the Small Wins and Big Wins categories. Evaluate the ideas using the GE Work-Out evaluation grid:

	EASY TO IMPLEMENT	TOUGH TO IMPLEMENT
SMALL PAY-OFF	SMALL WINS	TIME-WASTERS
BIG PAY-OFF	BIG WINS	SPECIAL CASES

4. GE WORK-OUT

IDEA	EASE OF IMPLEMENTATION	POTENTIAL PAYOFF	EVALUATION
1			
2			
3			
4			
5			
6			