The Steps of the Creative Problem Solving Process

Step	*Purpose*	*How to Diverge*	*How to Converge*
Objective Finding (OF)	To find a goal, wish or challenge upon which you might want to apply the Creative Problem Solving process.	Explore Possible Outcomes: List your goals, wishes, or challenges. Make a long list of wishes even if you already know your general area of interest. The list takes the form of "I wish…", "It would be great if…." Questions: What do you want to accomplish (outcomes)? What are the opportunities? If there were no impediments, what are your dreams?	Choose the goal, wish, or challenge that is the most urgent and important and which you have influence over. This becomes the starting point for Fact Finding. Verify with the group that the objective/goal addresses its concerns in an imaginative and focused way.
Fact Finding (FF)	To illuminate the situation as it pertains to the goal/wish/challenge.	Generate Information: Describe current reality—the facts, indicators, issues, questions and missing information. Make it as evidence-based as possible. Questions: Who is involved? What, when, where, why is it happening? How have you tried to improve the situation? What don't you know? What are your opinions?	Select the Biggest Issue: What data can be grouped together? What facts and views are most important? What others merit attention? What is the essence of the data? What issue must be addressed first? Use the facts and perceptions as a starting point for Problem Finding.
Problem Finding (PF)	To redefine the issue or problem in as many different ways as possible in order to uncover the real issue. A problem well defined is half solved.	Dig Deeper for the Real Problem: Construct as many varied "In What Ways Might I/We…" or "How might…" or "How to…" questions as possible. Ask: Why haven't we solved this already? Why? Keep asking why… Hint: Try using key facts from Fact Finding or restatements from the Objective Finding discussions to expand and stimulate your thinking.	Clarify Problem: Select a single specific IWWMW question that, if answered successfully, would best address the group's goal, wish, or challenge. Tip: Combine or reword problem questions. Make the final Problem Question specific.
Idea Finding (IF)	To find a range of potential solutions that would reliably and practically address the Problem Question.	Brainstorm Solution Ideas: Push the edges of your thinking by coming up with 30-100 ideas that would answer the "IWWMW…" question you selected. Hint: Change perspective: How would a ____ view this problem? Simulate divergence by using a variety of methods: SCAMPER, forced connections, analogies. GET WILD & CRAZY.	Narrow the List of Solutions: Narrow down your list to 3 to 5 possible solutions which are either outstanding ideas for continuous improvement (CI) or new and different blockbuster (BB) ways to approach the problem
Solution Finding (SF)	To identify the best solution(s) to resolve the real problem.	Build the Framework for Evaluating Possible Solutions: What are our "musts" and "wants" with respect to our original goal? What risks do we want to mitigate or avoid? Search for factors: "The solution will work if it ___", "Will it ___", or "Does it ___".	Find the Best Balanced Solution(s): Consolidate the criteria. Assess the fit of each solution from "Idea-Finding" against each criterion. Choose solutions that best meet the criteria.
Acceptance Finding (AF)	To develop a doable, focused and well-paced action plan for your solution:	Shape a Plan: What has to happen? Where? When? What resources? What approvals? Deadlines? Objectors/Obstacles? How will the ideas be implemented?	Reduce the Action Steps. Prioritize, set targets, sub-divide actions, identify dependencies, commit to doable implementation pace, confirm a champion.

Adapted from: **Osborn-Parnes Creative Solving Model**, Creative Education Foundation

Idea Finding Techniques

Technique	*How*
Inverse A problem question that has the opposite meaning to the original problem question(s). For example, from *"How can we increase communications" to "How can we decrease communications?*	➢ Word a problem question so that it has the opposite meaning. ➢ Generate a number of reverse or inverse ideas around the original problem question or issue area.
Forced Connections Involves connecting two or more apparently different ideas, concepts, or things which typically are unrelated. For example: *a new car and an excellent marketing organization; an iceberg and an effective manager.* Although seemingly unrelated items, if you think about a new car or an iceberg, you can find characteristics and qualities that might also relate to excellent marketing organizations and effective managers. Quantity is a must with this technique.	➢ Select an item from your meeting room on which to focus. Alternatively, choose a word, piece of music, animal, famous person or aspect of the natural world or science. ➢ Focus on what makes the item special by describing about ten characteristics. ➢ Go back to the problem question. ➢ Force an association or connection between the description of the item and the problem. For example, the object is a pig, and its characteristics are "tastes good", "fat", and "dirty". If the problem is to develop a new roof material, connections might include making it dirt repellent and keeping it thin to cut costs.
Circle of Opportunity (pair of dice required) Randomly isolates one or two attributes of your challenge for comprehensive consideration—all the other attributes stay "stacked up", allowing you to isolate or "land" a new idea. Source: M. Michalko, ThinkerToys. .	➢ State the challenge. ➢ Draw a circle and number it like a clock, 1 through 12 ➢ Identify any 12 attributes common to your challenge (colour, shape, texture, taste, sound, structure, odor, density, substance, functions, politics, taboos…). Write attributes next to the numbers on your circle. ➢ Throw one die to choose the first attribute. Throw both dice to choose the second attribute. ➢ Consider the attributes both separately and combined. Free associate, tracking your connections to the attributes in a mind map or similar configuration. ➢ Now, search for a link between your associations and the challenge.
SCAMPER Alex Osborn, a pioneer teacher of creativity, first identified the nine principle ways of improving divergent thinking. They were later arranged by Bob Eberle into an easy to remember acronym: SCAMPER. It's a useful tool to generate diverse ideas. REMEMBER: Divergent Thinking: Generating lots of options by: ➢ Deferring Judgment ➢ Striving for Quantity ➢ Seeking wild ideas ➢ Combining and Building on ideas. Convergent Thinking: Judging options; making decisions by: ➢ Judging affirmatively; "What I like about this is …" ➢ Being Deliberate ➢ Examining, refining, revising and improving ideas ➢ Checking your objectives; "It would be nice if … a list of your criteria"	➢ Substitute something. "What could I use instead?" or What other ingredients, materials, or components could I use ➢ Combine it with something else. "How can I combine parts or ideas?" "Are there two things I could blend rather than coming up with something new?" ➢ Adapt something to it. "What else is like this?" "Could we change or imitate something else?" ➢ Magnify or add to it. "How could I make it bigger, stronger, more exaggerated, or more frequent?" ➢ Modify it. "Could we change a current, idea, practice or product slightly and be successful?" ➢ Put it to some other use. "How can I use this in a new way?" ➢ Eliminate something. "What can be omitted or eliminated? Are all the parts necessary? Is it necessary to solve this problem at all?" ➢ Rearrange it. "Could I use a different sequence? Could I interchange parts?" ➢ Reverse it. "Could I do the opposite?" What would happen if I turned it upside down, backward, or inside out?" e.g. reversible winter coat