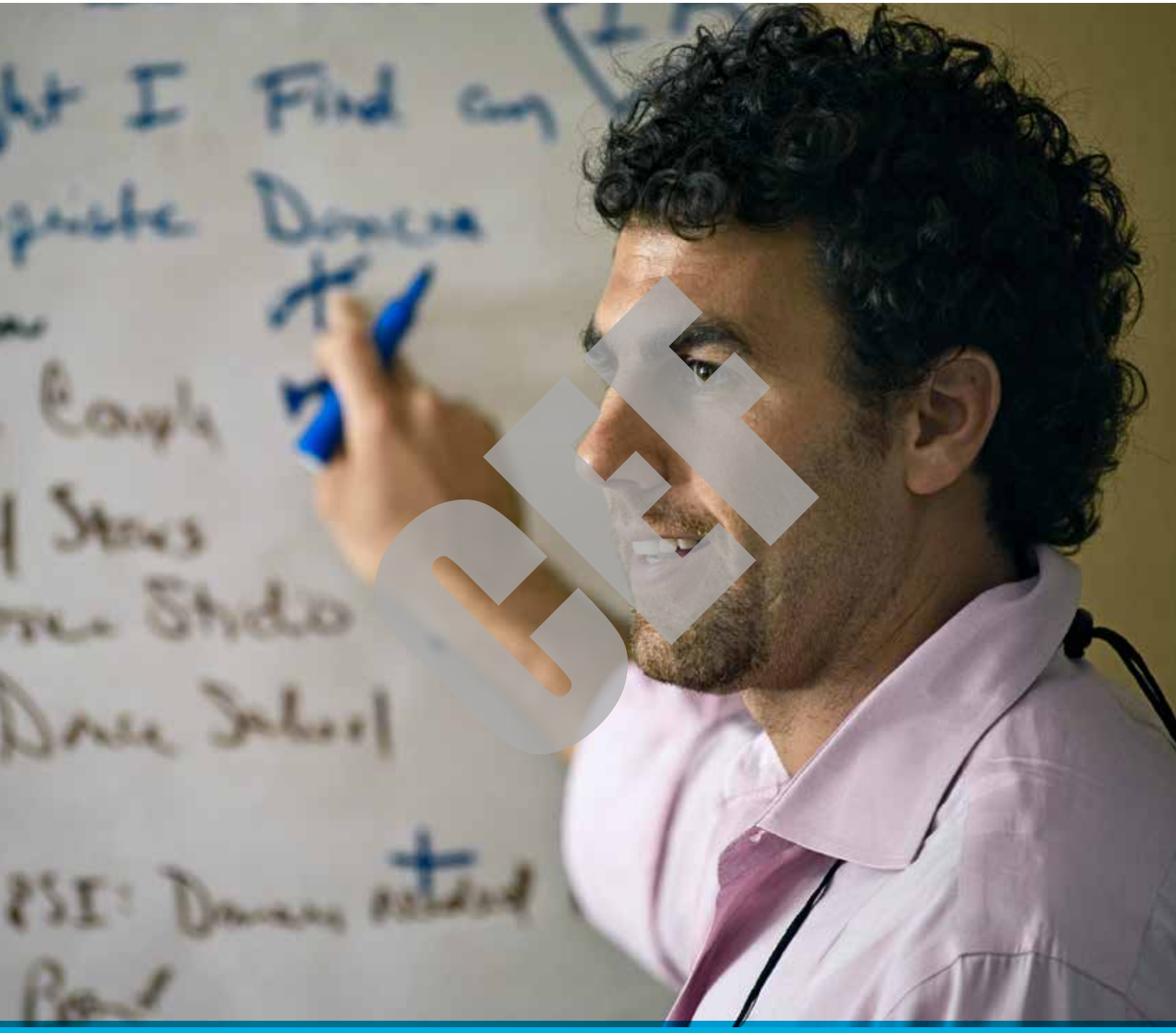
Creative Education Foundation™

Creative Problem Solving Tools & Techniques Resource Guide



"We can all create a desired future instead of merely accepting what life offers." — Sidney Parnes

"Imagination is more important than knowledge. For while knowledge defines all we currently know and understand, imagination points to all we might yet discover and create." — ALBERT EINSTEIN

Table of Contents

Special Thanks & Acknowledgements

The Creative Education Foundation (CEF) is deeply grateful to those whose efforts made this guide possible. In particular, we acknowledge the groundbreaking work of Alex Osborn, Sidney Parnes, PhD; and Ruth Noller, PhD. Alex Osborn helped us learn that it is "easier to tone down a wild idea than it is to think up a new one." He also crafted creative thinking techniques that are now used worldwide. Osborn founded CEF in 1954 and launched the Creative Problem Solving Institute (CPSI). Parnes joined him the next year and became a guiding force for both CEF and CPSI.

Parnes partnered with Osborn beginning in the 1950s to develop methods for teaching creative thinking and problem-solving. After founding the Creative Problem Solving Institute, CEF sponsored, with Parnes and Noller teaching, the nation's first creative studies graduate courses at SUNY Buffalo State. Parnes' work focused on helping people learn and practice deliberate creativity in their personal and professional lives as well as in academic settings. This assemblage of tools and techniques represents the collective wisdom of many gifted and generous trainers, facilitators, and authors. We are tremendously grateful for their time, efforts, talents and devotion to the Creative Problem Solving Institute (CPSI) and the Creative Problem Solving (CPS) process.

Much gratitude go to the contributions of Roger Firestien, PhD; Scott Isaksen, PhD; Marie Mance, MS; Blair Miller, MS; Mary Murdock, PhD; Dorte Nielsen, MS; Sarah Thurber, MS; Don Treffinger, PhD; Gerard Puccio, PhD; and Jonathan Vehar, MS.

We also thank the 2015 CPSI Tools & Techniques team members who sculpted this guide into its current iteration: Jean Bakk, Ana Castelan, MS; Jody Fisher, MS; Karen Lynch, Alison Murphy, MS; and Susan Newhouse.

CEF also thanks its dedicated volunteers who continue to refine the materials used to teach Creative Problem Solving as the craft evolves. The background information around CPS was pulled together by the CEF Training & Materials Committee and CEF staff: Beth Barclay, Dan Bigonesse, Stephen Brand, PhD; Clare Dus, Gert Garman, Sunil Gupta, PhD; Karen Lynch, Dimis Michaelides, MBA, MA; Suzie Nussel, Kristen Peterson, MS; Elizabeth Power, MEd; Rosemary Rein, PhD; Beth Slazac, MS. Previous versions were developed through the efforts of a number of people including Tony Billoni, Cyndi Burnett, EdD; Suzanne Chamberlain, Jeanne Chatigney, Roger Firestien, PhD; Diane Foucar-Szocki, EdD; John Frederick, Paul Groncki, PhD; Bill Hartwell, Chris Heinz, Tim Hurson, Hedria Lunken, Siri Lynn, Blair Miller, MS; Cheryl Nee-Gieringer, MA; Russ Schoen, MS; Bill Shephard, Sarah Thurber, MS; and Jonathan Vehar, MS.

Special thanks also goes to the International Center for Studies in Creativity at SUNY Buffalo State College, FourSight LLC, Blair Miller, MS; Gerard Puccio, PhD; and Sarah Thurber, MS for their contributions to the field and specifically for their help with permissions, production, and process.

Finally, appreciation to the generosity and thought leadership of the CEF and CPSI community in sharing best practices and evolving work in creative studies.

RESOURCES

Here are just a few of the amazing resources that are frequently tapped by CPSI leaders and impacted the creation of this guide:

- *Creativity Unbound: An Introduction to Creative Process* by Blair Miller, Jonathan Vehar, Roger Firestien
- *Mindmapping* by Joyce Wyckoff
- *Moderating To The Max: A Full-Tilt Guide to Creative, Insightful, Focus Groups and Depth Interviews* by Jean Bystedt, Siri Lynn, Deborah Potts
- *The Creative Marketer*, by S. Majaro
- *What A Great Idea* by Chic Thompson
- *Think Better* by Tim Hurson
- *Gamestorming: A Playbook for Innovators, Rulebreakers and Changemakers* by Dave Gray, Sunni Brown and James Macanufo
- *Innovation to the Core* by Peter Skarzynski and Rowan Gibson
- *Business Model Generation: A Handbook for Visionaries, Game Changers and Challengers* by Alexander Osterwalder and Yves Pigneur
- *Synectics: The Development of Creative Capacity* by William Gordon
- *The Practice of Creativity* by George Prince

How to Use this Manual - Tool Index

This manual was written for someone relatively new to CPS and with limited experience in facilitation. The tools are described from the point of view of a facilitator working with a problem owner/stakeholder or a resource group. Many of the tools included in the manual can also be used when working with one individual or when self-facilitating a personal challenge by adapting the instructions.

	If you're in…	Consider using this tool:	
STAGE	STEP	DIVERGE	CONVERGE
ALL STAGES		Brainstorming Brainstorming - StickEm Up Brainwriting PPCO	Dot Voting (Hits) Highlighting PPCO
CLARIFY	Explore the Vision	50 Aspirations Collage DRIVE Forced Connections Give & Take Group Doodle Invitational Language Stems Mindmapping Pictures as Metaphors Storyboarding Storytelling Visualization	3 I's DRIVE Post & Cluster
	Gather Data	Context Map Empathy Map Mindmapping Pictures as Metaphors Storyboarding Storytelling Visualization 5 "W"s and an "H"	Post & Cluster
	Formulate the Challenge	Why, What's Stopping You? Word Dance	3 "I"s Post & Cluster Problem Police

	If you're in…	Consider using this tool:	
STAGE	**STEP**	**DIVERGE**	**CONVERGE**
IDEATE	**Explore Ideas**	Assumption Reversal Group Doodle Forced Connections Mindmapping Pictures as Metaphors Morphological Analysis SCAMPER Visual Excursion Visualization Wall of Don't	3 "I"s Post & Cluster
DEVELOP	**Formulate Solutions**	DRIVE Mindmapping POINt Storyboarding Storytelling Pictures as Metaphors	ALU DRIVE Evaluation Matrix How-How Diagram Pair & Share Post & Cluster Targeting Visualization
IMPLEMENT	**Formulate a Plan**	Assisters & Resisters	Action Plan Post & Cluster

Where brainstorming begins —
The Creative Education Foundation.

Our mission is to "Engage and develop the next generation of creative thinkers and innovators." As a 501(c)(3) non-profit organization, we connect leading creativity experts and practitioners with beginners from across diverse backgrounds and fields.

Our dream is that all people — regardless of economic background, education, or culture — have access to the tools to solve challenges and create a better world.

Founded in 1954, The Creative Education Foundation (CEF) has a rich legacy. Our founder, **Alex Osborn,** and **Dr. Sidney J. Parnes** were leaders of the deliberate creativity movement. Their passion extended to many contributions, including:

- Osborn co-founded the advertising firm BBDO and invented "brainstorming"
- Osborn wrote the classic book *Applied Imagination* (1953)
- Osborn and Parnes developed the Osborn-Parnes Creative Problem Solving Process
- Osborn and Parnes establsihed the longest-running creativity conference (CPSI)

For more than 60 years, CEF has worked closely with leading corporations, academic institutions and community organizations.

We invite you to join us.

Alex Osborn
1888-1966

Dr. Sidney Parnes
1922-2013

Why Creative Problem Solving (CPS)?

Mastery of Creative Problem Solving as a practice equips you to:

- Create an environment in which creativity and innovation thrive
- Use a broad set of tools and methods to foster key behaviors conducive to creative thinking
- Engage personal, organizational, and social benefits of CPS
- Use tools for divergent and convergent thinking
- Practice specific CPS methods in the service of personal, organizational, and social challenges
- Practice deliberate creativity as an integral part of work and life
- Apply core principles of the Creative Problem Solving process in multiple settings.

Setting the Stage

Creativity: What is your definition of creativity? How inclusive is it? Where are the boundaries around it?

Some definitions of creativity:

- **"Novelty that is useful."** First referenced in 1724 in the text, *The Irish Historical Library,* and later stated by Stan Gryshiewicz, PhD, Center for Creative Leadership.
- "**Creativity is the production of novel and useful ideas in any domain."** Professor Teresa M. Amabile, PhD, Harvard Business School.
- **"Creativity is the process of bringing something new into being."** Psychologist Rollo May, PhD.

Being aware of your own definition is helpful, since it impacts your approach to the process. Because creativity is subjective, there is no "wrong" definition.

CEF uses a shared understanding that has common characteristics. Creativity is thinking that:

- Is imaginative
- Includes the new and novel
- Focuses on the process
- May be deliberate

As you learn CPS, you'll use specific tools and methods to foster deliberate creativity, problem solving, and innovation. Through the process, you'll (re)discover and unleash your creativity.

Barriers and Bridges to Creativity

Saying that creativity may be "deliberate" means that it is intentional — something done with thought and the application of specific processes. The more the tools and skills associated with creative thinking and Creative Problem Solving are used, the more ingrained the habit of creative thinking becomes and the easier it is to utilize in many contexts.

Of course, there are both barriers and bridges to the practice of deliberate creativity.

BARRIERS

As with any practice of effort, some barriers are quite common. When people feel they are being judged negatively for their efforts, these barriers can also become self-protective statements:

- "We don't have time!"
- "It takes too many resources."
- "I'm just not the creative type."
- "In this culture? You've got to be kidding."
- "Not me! I'm not hanging myself out to dry like that."
- "I don't have a creative bone in my body. Not my skill-set."
- "Don't we have an art department that does that?"
- "I don't want to look stupid."
- "We tried that before. It won't work."

Notice that all of these focus on time, resources, culture, internal and external judgment, and perceptions of talent or skill. Whether these are external statements or internal self-talk, they have a dramatic impact: they help others believe that they aren't, can't be, or shouldn't be creative — and that simply isn't the case. So, remember that everyone has tremendous creative potential that can be unlocked and harnessed. The challenge is to identify the factors that affect awareness and use of creativity. Once an individual knows those, it's easier to make productive choices about how to use, improve, and refine skills that support creativity.

"Learn the craft of knowing how to open your heart and to turn on your creativity. There's a light inside of you." — JUDITH JAMISON

BRIDGES

Along with the barriers that inhibit the ability to express creativity, there are also bridges. These key elements support deliberate creativity and creative thinking. They include the choice to:

- Shift from ***"Yes, but"*** to ***"Yes, and"*** thinking
- Foster a ***"What if?"*** outlook (remaining curious)
- Suspend or defer judgments to maintain openness to new ideas
- Recognize that every experience informs creativity
- Embrace incubation and letting the brain work "out of awareness" on ideas
- Develop a climate for creativity; changing the physical environment or mental/emotional outlook to be open to new ideas
- Use Creative Problem Solving tools to hone practice
- Work ideas instead of using them (allowing them to change and develop)
- Balance the use of imagination, knowledge, and evaluation
- Develop an internal observing "wise self."

What is Creative Problem Solving?

CPS is a proven method for approaching a problem or a challenge in an imaginative and innovative way.

It helps people re-define the problems and opportunities they face, come up with new, innovative responses and solutions, and then take action. The tools and techniques used make the process fun, engaging, and collaborative. CPS not only helps create better solutions, it creates a positive experience that helps speed the adoption of new ideas.

Noted CPS educator and practitioner, Ruth Noller, PhD, described CPS as the sum of its parts:

Creative specifies elements of newness, innovation, and novelty.

Problem refers to any situation that presents a challenge, offers an opportunity, or represents a troubling concern.

Solving means devising ways to answer, to meet, or to satisfy a situation by changing self or situation.

Ruth Noller also created a symbolic equation for Creative Problem Solving[1]:

$$C = fa(K, I, E)$$

Creativity is the Function of combining Knowledge, Imagination, and Evaluation, all of which are tempered by "attitude."

Fostering a positive belief that each person is creative is the key to engaging knowledge, imagination, and evaluation.

"Creative Problem Solving" generates variations on the method can be traced back to the work of Alex Osborn in the 1940s, developed with Sid Parnes in the 1950s, and nurtured at SUNY Buffalo State and the Creative Education Foundation. Osborn noted in his breakthrough book, *Applied Imagination*, that Hindu teachers had been using brainstorming for over 400 years and Walt Disney[2] encouraged it among his artists in the 1920s (later called "dreaming as a team"). Osborn formalized the tool in the 40s. The Creative Education Foundation focuses on an evolution of Osborn-Parnes' CPS model, called the CPS Model.

Core Principles of Creative Problem Solving

CPS begins with two assumptions:

> ***Everyone is creative.***
> ***Creative skills can be learned and enhanced.***

The core principles are:

Divergent and convergent thinking must be balanced. Keys to creativity are learning ways to identify and balance expanding and contracting thinking (done separately) and knowing when to practice them.

Ask problems as questions. Solutions are more readily invited and developed when challenges and problems are restated as open-ended questions with multiple possibilities. Such questions generate lots of rich information, while closed-ended questions tend to elicit confirmation or denial. Statements tend to generate limited or no response at all.

Defer or suspend judgment. As Osborn learned in his early work on brainstorming, the instantaneous judgment in response to an idea shuts down idea generation. There is an appropriate and necessary time to apply judgment when converging.

Focus on "Yes, and ..." rather than "No, but." When generating information and ideas, language matters. "Yes, and" allows continuation and expansion, which is necessary in certain stages of CPS. The use of the word "but"—whether preceded by "yes" or "no"— closes down conversation, negating everything that has come before it.

"It is easier to tame a wild idea than it is to push a closer-in idea further out." — ALEX OSBORN

Divergent and Convergent Thinking: The Dynamic Balance of Creativity

In *Applied Imagination,* Alex Osborn noted two distinct kinds of thinking that are essential to being creative:

Divergent Thinking: Generating lots of ideas and options
Convergent Thinking: Evaluating ideas and options, and making decisions

People engage in both kinds of thinking on a daily basis. The secret to creating new ideas, however, is to **separate divergent thinking from convergent thinking**. This means generating lots and lots of options before evaluating them.

DIVERGENT THINKING GUIDELINES

Both Osborn and Parnes note the importance of removing the barriers to **divergent thinking** in their book *Visionizing*. They suggest that criticism is taboo, free-wheeling is desirable, quantity breeds quality, and combinations and improvement are sought.

These suggestions have been condensed into guidelines for divergent thinking:

Defer Judgment – Deferring judgment isn't the same as having no judgment. It just says, "hold off for a while." Avoid judging ideas as either bad or good in the divergent-thinking phase.

Deferring judgment is a key component to any successful problem-solving session. Without it, generating novel solutions becomes almost impossible.

Combine and Build – Use one idea as a springboard for another. Build, combine, and improve ideas.

Seek Wild Ideas – Stretch to create wild ideas. While these may not work directly, getting way outside the box allows the space needed to discover extraordinary ideas.

Go for Quantity – Take the time necessary and use the tools in this guide to generate a long list of potential options.

To make it easier to generate a long list, set a concrete goal such as at least 50 ideas in 7 minutes for groups or 30 ideas in 7 minutes if solo before going to the next step. This sharpens focus and prompts the changes the brain needs to get moving. It also supports "deferring judgment."

Divergent Thinking Guidelines

- **Defer Judgment**
- **Combine and Build**
- **Seek Wild Ideas**
- **Go for Quantity**

In the 1970s, Sid Parnes and Ruth Noller conducted a ground-breaking research study called the **Creative Studies Project**[3]. This research demonstrated that students trained in divergent thinking techniques were able to produce twice as many quality ideas as those who did not have creativity training.

"The best way to have good ideas is to have lots of ideas.. and then throw the bad ones away." – LINUS PAULING

CONVERGENT THINKING GUIDELINES

At certain points in the process, thinking and focus need to shift.

To select the best of the divergent options, determine their potential value. In the **convergent thinking** process, choice is deliberate and conscious. Criteria are purposefully applied to screen, select, evaluate, and refine the options, all the while knowing that raw ideas still need development.

Scott Isaksen, PhD and Don Treffinger, PhD proposed convergent thinking guidelines in *Creative Problem Solving, the Basic Course* (1982).

Use the guidelines that follow when it's time to make decisions about the ideas generated by divergent thinking.

Be Deliberate – Allow decision-making the time and respect it requires. Avoid snap decisions or harsh judgments. Give every option a fair chance.

Check Your Objectives – Verify choices against objectives in each step. This is a reality check – are the choices on track?

Improve Your Ideas – Not all ideas are workable solutions. Even promising ideas must be honed and strengthened. Take the time to improve ideas.

Be Affirmative – Even in convergence, it's important to first consider what's good about an idea and judge for the purpose of improving, rather than eliminating, ideas.

Consider Novelty – Do not dismiss novel or original ideas. Consider ways to tailor, rework, or tame.

Convergent Thinking Guidelines

- Be Deliberate
- Check Your Objectives
- Improve Your Ideas
- Be Affirmative
- Consider Novelty

Roles in Group Facilitation and Ownership

Effective brainstorming comes by setting up distinct roles. In *Applied Imagination*, Alex Osborn was the first to address the role and responsibility of the facilitator (or leader of the "brainstorming panel"). Later, the roles of client and resource group were identified by Treffinger, Isaksen, and Firestien in *Creative Problem Solving: The Basic Course*.

THREE KEY ROLES: THE CLIENT, THE FACILITATOR & THE RESOURCE GROUP

The Client:

- Owns the "problem" and defines the challenge to be worked on
- Is the key decision-maker or implementer
- Selects the group to work on the challenge
- Provides direction throughout session
- Is responsible for or approves all convergence

The Facilitator:

- Is responsible for managing the CPS process
- Manages logistics, idea flow, and group development
- Makes sure the client gets what he/she needs from the group
- Meets with the client before gathering the resource group and afterward to debrief and apply back learnings from the session

The Resource Group:

- Serves the needs of the client
- Provides energy, ideas, insights, and diverse points of view during all divergent phases
- Adds new perspectives, especially if they represent members not directly involved with the situation

CPS Process & Model

EVOLUTION OF CPS

Creative Problem Solving has changed and evolved over the past 60 years. Many organizations and individuals have contributed to this evolution. Through continuous research, development, and training related to CPS, the International Center for Studies in Creativity at SUNY Buffalo State has been, and continues to be, a primary contributor to this evolution. The changes that have taken place relate to the steps in the model and the language used to describe them.

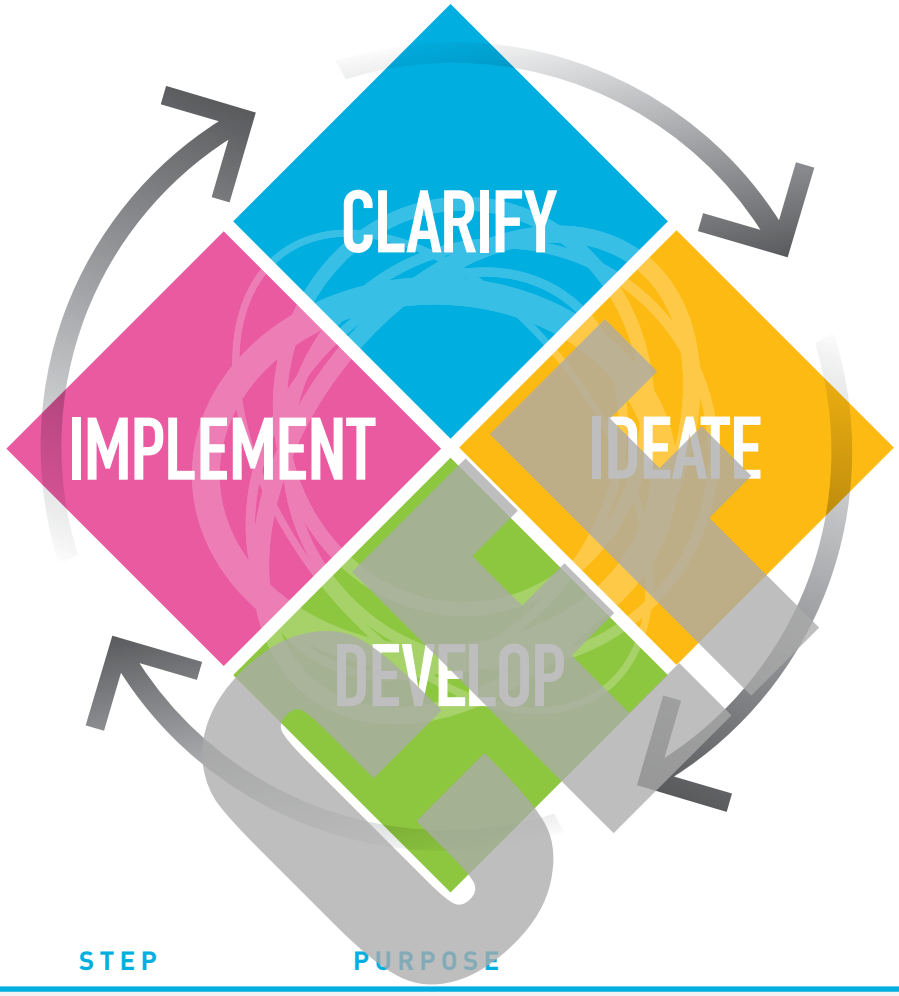
Over time many divergent and convergent tools have been developed, which greatly enhance innovation and design thinking. During all CEF training, tools are presented at the appropriate steps but may also be used at other times.

THE STAGES IN CPS MIRROR THE WAY PEOPLE NATURALLY SOLVE PROBLEMS

At the same time that CPS is a structured process, it's also a flexible one. CPS is cyclical, and as users move from step to step, it becomes possible to jump back and forth between the four stages. When CPS becomes a regular and frequently used way of thinking and working, each step can be used as needed, when needed. Mastery of the fundamentals of CPS enables adapting the process to every situation encountered.

CPS Model

In the most recent iteration of the CPS Model, there are four stages with six explicit steps. Within each stage, each step uses divergent and convergent thinking.



STAGE	STEP	PURPOSE
CLARIFY	Explore the Vision	Identify the goal, wish, or challenge.
	Gather Data	Describe and generate data to enable a clear understanding of the challenge.
	Formulate the Challenge	Sharpen awareness of the challenge and create challenge questions that invite solutions.
IDEATE	Explore Ideas	Generate ideas that answer the challenge questions.
DEVELOP	Formulate Solutions	To move from ideas to solutions. Evaluate, strengthen, and select solutions for best "fit."
IMPLEMENT	Formulate a Plan	Explore acceptance and identify resources and actions that will support implementation of the selected solution(s).

CPS Model based on work of G.J. Puccio, M. Mance, M.C. Murdock, B. Miller, J. Vehar, R. Firestien, S. Thurber, & D. Nielsen (2011).

Clarify – Explore the Vision

Purpose

Identify the goal, wish, or challenge.

Diverge

- Generate goal or wish statements.
- Ask participants in ways that allow narrative (use an invitational language stem): **"I wish..."** and **"It would be great if...."**

Sample Diverging Questions

- What are goals you'd like to accomplish?
- What's been on your mind? Why?
- What do you wish worked better? What are the challenges?
- What would you like to do differently?
- What have you never done that you would like to do?
- Imagine yourself one year from today. What goals, dreams, or visions have you accomplished?
- If you had unlimited time, funds, and support, what would you accomplish?
- What is going on at home or in our communities that should change?

Tools for Diverging: Brainstorming, Brainwriting

Converge

Choose the goal/wish/challenge using the tool, **3 "I"s**:

1. Is it **Important**?
2. Do you have **Influence**?
3. Do you need new **Ideas**?

Tools for Converging: Dot Voting, Highlighting (Hits, Cluster, Restate)

Outcome

Statement of key goal, wish, or challenge to address.

Clarify – Gather Data

Purpose

Describe and generate data to enable a clear understanding of the challenge.

Diverge

- Generate as much data/facts/feelings as possible.
- Ask questions: **Who, What, When, Where, Why, How?**

Sample Diverging Questions

- Ask yourself, "What do I know about this challenge?"
- What is a brief history of the situation?
- What is the origin of this challenge? When did it become a challenge?
- How does this challenge make you feel?
- Who else is involved? What is their role? Who are the key decision-makers?
- Why is this a challenge?
- What is your influence over the situation?
- What are the different components of the challenge?
- What have you already tried?
- What does your gut tell you? What is your ideal outcome?
- What are the success criteria?

Tools for Diverging: Brainstorming, Brainwriting, 5 "W"s & an H

Converge

- Review and select the most important data that best helps you understand your challenge statement.
- Take all the data that you have checked and group it into clusters with the same theme. You can make as many clusters as necessary.
- Take a moment and use one or two words to restate or label each cluster.

Tools for Converging: Dot Voting, Highlighting (Hits, Cluster, Restate)

Outcome

Significant data, information, and success criteria to enable a clear understanding of the challenge.

Clarify– Formulate the Challenge

Purpose

Sharpen awareness of the challenge and create challenge questions that invite solutions.

Diverge

- Generate a long list of challenge statements phrased as questions. Look at your challenge from as many directions as you can imagine.
- Use the invitational language stems with: **"How to ..." (H2), "How might I ..." (HMI), and "In what ways might we ..." (IWWMW).**

Sample Diverging Questions

- Rephrase challenge statement from **Explore** the Vision as a **HMI** question.
- Rephrase key data as questions.
- Rephrase barriers to success as questions.
- Phrase questions from other perspectives: stakeholders, a child, a mentor, or a famous person.

Tools for Diverging: Brainstorming, Write Data as Questions, Word Dance, Ladder of Abstraction

Converge

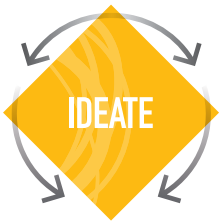
- Select the challenge statement that addresses what really needs to be addressed or solved.
- Set aside questions that are really ideas and revisit them in the next step.
- Check to make sure the challenge statement is brief, focused, and beneficial.

Tools for Converging: Dot Voting, Highlighting (Hits, Cluster, Restate), 3 "I"s

Outcome

A refined challenge question (reframed problem) that invites solution and stimulates new thinking.

Ideate – Explore Ideas



Purpose

Generate ideas that answer the challenge questions.

Diverge

- Using short phrases or headlines, generate ideas to answer your challenge question.
- Stretch for as many ideas as possible, then generate more.

Sample Diverging Questions

- What ideas immediately come to mind to answer your challenge question?
- What are all the ideas you can imagine for solving this?
- What ideas would key stakeholders have?
- Imagine you are (a child, the CEO, a movie star, etc.). What ideas do you have?
- What are the worst ideas, the ones that will get you fired? Now reverse them.
- SCAMPER: What can you Substitute, Combine, Adapt, Modify, Put to other uses, Eliminate, or Rearrange?

Tools for Diverging: Brainstorming, Excursions, Forced Connections, SCAMPER

Converge

- Generate a long list of ideas; mark them as "workable," "innovative," and "may solve the challenge."
- Stretch for novelty at this point.
- Keep some of the wild and unusual ideas in the mix.
- Group the ideas you have chosen into thematic clusters representing paths to solving the challenge. When you are done, give each cluster a 1-2 word name that captures its essence.
- Choose the cluster(s) that appears to be the best path to take. Restate it as an idea, adding the starter phrase, **"What I see myself doing is ..."** to the beginning of the cluster title.
- If more than one cluster is appealing, you can use the criteria generated in the next stage (Develop) to choose the strongest solution.

Tools for Converging: Dot Voting, Highlighting (Hits, Cluster, Restate)

Outcome

List of ideas or alternative actions that may solve the challenge.
"What I see myself doing is ...."

Develop – Formulate Solutions

Purpose

Move from ideas to solutions. Evaluate, strengthen, and select solutions for best "fit."

Diverge

- Generate a list of options to strengthen the idea(s) and categorize them by level of potential.

Sample Divergent Questions

- What do you like about the solution? What are its advantages or positive points?
- What would become possible in the future if this came to pass?
- What are the spin-offs or possible future gains? (Use the statement starter, **"It might ..."**)
- What are possible limitations? (Be sure to pose these as questions: **"How to ...," "How might I ...," and "In what ways might we ..."**)
- Generate ways to overcome concerns one at a time, in order of their importance.

Tools for Diverging: Brainstorming or PPCO (Pluses, Potentials, Concerns, ways to Overcome concerns)

Converge

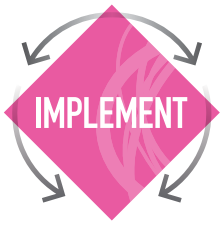
- If you have multiple solutions, use an Evaluation Matrix to help select and further refine.
- Revisit the success criteria from the second step, Clarify – Gather Data. Clarify to be as specific as possible. **For example:** *"Will it be operational in three months?"* is more specific than *"Will it be ready soon?"*
- Review your solution statement along with your lists from PPCO.
- Select the most important options to incorporate and create a more robust solution that starts with, **"NOW what I see myself doing is ...."**

Tools for Converging: Dot Voting, Evaluation Matrix

Outcome

Solution to be implemented. Restate (**"NOW what we see ourselves doing is ..."**).

Implement – Formulate a Plan



Purpose

Explore acceptance and identify resources and actions that will support implementation of the selected solution(s).

Diverge

- Generate a list of "assisters" who can help make your solution a reality. Include ways to enlist their help.
- Generate a list of "resisters" and ways to overcome their resistance.
- Generate a long list of short statements of all the actions needed to make your solution a reality.

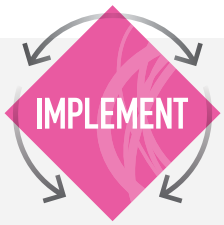
Sample Diverging Questions

- Who might assist you with your solution?
- What resources are available (people, materials, money)?
- How can you gain acceptance for this solution?
- How can you build enthusiasm?
- Who might resist or need to be convinced?
- What are some things you might need to work to overcome?
- What are some contingencies you might develop for your solution?
- What steps might you take to put your solution into action?
- Where might you start?
- What short-term actions do you need to take? What mid-term actions do you need to take? What long-term actions do you need to take?
- How can you maintain enthusiasm for this solution?
- What can you do in the next 24 hours?

Tools for Diverging: Brainstorming, Brainwriting, Assisters/Resisters

"If you can dream it, you can do it." — WALT DISNEY

Converge



- Review your list and select all actions needed to ensure success.
- Create a plan: What to do? Who will do it? By when will it be done? Who will check or who needs to know when it's done?
- Arrange your actions according to when they need to be completed, from soonest to latest.
- Assign each action to a person, affix specific dates, and make sure someone is checking to ensure that all actions are getting done.
- Assign at least one "jump start" action that can be completed in the next few hours and then the next 24 hours.

Tools for Converging: Dot Voting, Highlighting (Hits, Cluster, Restate), Action Plan

Outcome

Use the tool **Action Plan**. List resources and action steps needed to sell or implement selected solution. Sort the action steps by short-, mid-, and long-term and specify what, who, by when, and who checks the step.

	What?	Who?	By When?	Who Checks?
Short-term				
Mid-term				
Long-term				

"Problems are only opportunities in work clothes." — HENRY J. KAISER

Divergent Tools

DIVERGENT TOOLS

5 "W"s and an H
(Who, What, Where,When, Why, and How)

Benefit

- Helps you gather data effectively

Instructions

Ask questions using each of the 5 "W"s and an H:

1. Who?

- Who is involved? Who else? Who makes the decisions?
- Who benefits from the problem being solved? Who loses?

2. What?

- How can you summarize the problem? What has happened until now?
- How have you already tried to solve the problem?
- What has already worked? What hasn't worked?
- What do you think of the situation personally?
- What is your attitude toward the problem?
- What results would be satisfying?
- What has helped you so far? What obstacles have you encountered?

3. Where?

- Where does this happen? Where doesn't it happen?
- Where have you found help? Where have you encountered obstacles?

4. When?

- When did the problem arise?
- When does this problem happen?
- When do you want to take measures to solve this problem?
- Since when has the problem been a major concern?

5. Why?

- Why is this problem important to you?
- Why might it be an opportunity for you?
- Why did you get help? Why have others not helped?
- Why did you encounter obstacles?

6. How?

- How are you involved in this problem? How do you "own" it?
- How has this evolved? In what ways?
- How long has this been a concern/goal/wish?

Use to: Gather Data

Origin: This is credited to Hermagoras of Temnos, a 1st century BC Greek rhetorician. It is also credited to W. Edwards Deming and to Sakichi Toyoda of Toyota in association with the management of process and quality. How and sometimes How Much are generally credited to GM Saturn, Toyota, and the Kaizen process.

DIVERGENT TOOLS

50 Aspirations

Benefit

- Generates many potential opportunities to explore

Instructions

1. **Set-up:** This is an individual, timed exercise. The time you allow depends upon the individuals involved, but setting a time limit pushes people to stretch and go for quantity. Give resource group/participants paper/form and pens.
2. Remind people of the Divergent Thinking Guidelines.
3. Everyone will have 10 minutes to write down 50 different goals, aspirations, challenges, problems, or dreams that they have. These may be big things or little things, near term or way out in the future. All should be personally relevant.

   Option: Use the form to encourage brainstorming to 50.
4. If people are getting stuck, encourage them to restate some of the interesting aspirations they already have.
5. When time is up, have everyone review their list and highlight or mark with a star 5 different goals, aspirations, challenges, etc., that are important to them.

Use in: Explore the Vision

Origin: Unknown.

Notes:

_____

_____

_____

_____

"Dreams are extremely important. You can't do it unless you can imagine it." – GEORGE LUCAS

50 Aspirations Worksheet

Write down 50 Aspirations, Goals, Wishes, Projects, Problems, Dreams…

DIVERGENT TOOLS

Action Plan

Benefit

- Helps break down one big idea into discrete, manageable steps

Instructions

Diverge:

1. Begin with a solution statement beginning with **"What I see myself doing is ...."**
2. Using sticky notes, generate a list of all the possible actions (one action per sticky note) that might be taken in order to make your solution a reality. Generate possible sources of assistance (assisters) and possible sources of resistance (resisters). Generate actions to leverage your assisters or overcome resisters.

Converge:

4. Arrange the actions into clusters of **"short-term,"** "medium-term," and **"long-term"** actions. You determine the time frames based upon your situation.
5. Within each cluster, arrange the steps in order.
6. For each action, specify who will be responsible and when it will be completed. Each step should also have someone who will check to ensure things are getting done.

   Make sure you create at least one action that can be completed in the next 24 hours – this will jump-start the process, making your proposed solution a reality.
7. Transfer the What, Who, By When, and Who Checks to a table for tracking.

   Add additional criteria as needed: "How," "With Whom" (who else will be helping), "Why," "Start Date," and "Success Indicators."

Use to: Formulate a Plan

	What?	Who?	By When?	Who Checks?
Short-term				
Mid-term				
Long-term				

Origin: Noller, R. B., Parnes, S. J., & Biondi, A. M. (1976). *Creative Action Book*. New York: Scribners.

DIVERGENT TOOLS

Assisters & Resisters

Benefit

- Get a picture of who or what will help and / or hinder the challenge owner in the implementation of an idea

Instructions

1. For each idea your group wants to review, ask the group to generate a list of the Assisters: people who can help make the idea a reality or a success. Also, list resources your group or others have in place that can help move the idea forward.
2. Generate a list of the Resisters to an idea: people or things that can hinder the progress of the idea, things that limit the idea from smoothly moving forward.

Use in: Formulate a Plan

Origin: Unknown.

Notes:

DIVERGENT TOOLS

Assumption Reversal

Benefit

- Generates novel and breakthrough ideas when ideas are listed then assumptions are systematically reversed

Instructions

1. Have the group generate a list of challenge statements and record them at the top of a flipchart page.
2. Generate a list of 6-10 assumptions about the idea (the more basic the assumption the more likely you are to create a breakthrough idea).
3. For each assumption, ask what is the reverse of the assumption and list new insights.
4. Have the group use these insights as a springboard to generate new ideas.

Use in: Explore Ideas

Origin: Unknown.

Example

What might be the next big restaurant concept?

List your assumptions about restaurants.

Reverse your assumptions to create breakthrough ideas for a new restaurant concept.

Food is cooked for you	You cook the food
Order food from a menu	Order attributes (indulgence, adventure)
Sit at a table in a chair	Living room furniture in eating areas
Food comes on a plate	Serve food on a frisbee
Go there with a group	Singles dining

Notes:

DIVERGENT TOOLS

Brainstorming

Benefits

- Offers versatility for working with groups (or alone), especially to solve problems
- Equalizes the room - allowing all group members to give input
- Promotes creative collaboration by groups

Instructions

1. Write down a statement of the challenge so it is visible to all.
2. Remind the group of the Divergent Thinking Guidelines.
3. Set a quota of ideas (options) and keep going until you meet it.
4. Gather and record concise and specific ideas.
5. Ideas should be stated in "headline" form and be recorded in written form so that all participants can see and read them. Record ideas as they are stated (do not edit!).
6. Periodically (every 15 ideas or so) check with the client or the group to make sure the ideas are going in the right direction.
7. Proceed until you have met your quota, or you have enough ideas to answer the challenge.

Use in: All steps of CPS when engaging divergent thinking

Origin: Brainstorming, as invented by Alex Osborn (*Applied Imagination*, 1953/1963), was defined as a "group's attempt to find a solution for a specific problem by amassing ideas."

DIVERGENT TOOLS

Brainstorming - Stick 'Em Up

Benefits

- Offers versatility for working with groups
- Equalizes the room - allowing all group members to give input
- Promotes creative collaboration by groups
- Increases speed and efficiency

Instructions

1. Start with the challenge or question being brainstormed.
2. Use 3"x 5" sticky notes and a dark, felt-tipped marker.
3. Write one idea per sticky note in headline form (2-5 words). Do not go into detail.
4. Write legibly! Others will need to read what you've written.
5. Call out your idea once you've written it or when you hand it in.
6. Keep an ear open for what others are calling out. If a build on someone else's idea occurs to you, write it down. If not, just move on with your own thinking.
7. Remember, the more ideas, the better!

Use in: All steps of CPS when engaging divergent thinking

Origin: Isaakson, A. & Dorval, K. et al. (1994/2000). *Creative Approaches to Problem Solving: A Framework for Change*. Kendall Hunt Pub. Co.

DIVERGENT TOOLS

Brainwriting

Benefits

- Equalizes the contribution of the resource group and allows for more introverted people to communicate their thoughts/ideas
- Allows for time to reflect and incubate on ideas without the pace of the session feeling slow
- Provides opportunities for deliberate builds on others' thoughts/ideas
- Allows for a change of pace during a loud, raucous meeting (a silent process)

Instructions

1. Give each participant a Brainwriting form.
2. Have participants write the statement of the challenge at the top of the form.
3. Review the Divergent Thinking Guidelines.
4. Ask participants to think of three ideas and write them down, one in each box in the first row (complete only one row).
5. Have participants exchange their Brainwriting forms.
6. On the new form, ask participants to write three ideas, on the second row — either new ideas or a build on the ideas written in row one.
7. Swap forms again.
8. Continue to swap forms until all the forms are full.
9. Provide additional forms, if needed.

Note: As an option to exchanging forms, each participant puts their form in the center of the table when done, then selects one from center to write on next.

Use in: All steps of CPS when engaging divergent thinking

Origin: Geschka, H. (1980). *Methods and Organization of Idea Generation*. S. Gryskiewicz.

DIVERGENT TOOLS

Collage

Benefit

- Creates a collection of pictures, words, symbols, or other materials that when combined create an image or an overall feeling about the topic at hand

Instructions

1. **Setup:** Collect and organize the following:
   - Large mural paper or easel sheets taped together on a wall or table for a group collage; large paper or an easel sheet for each person for individual collages.
   - Many magazines – enough so people have a choice to work from. Select magazines that are unrelated to the topic so as to force metaphorical thinking.
   - Scissors, glue, markers for completing the collage.
   - Organize all the materials with adequate work space.
2. Explain that they'll be creating a collage that visually represents the images, feelings, and associations they have about the topic at hand.
3. Encourage them to use symbols or metaphors rather than literal depictions, expanding their rational thinking into more expansive thinking.
4. Allow a total of 15-20 minutes for creating the collage, and give everyone a 5-minute warning when time is almost up.
5. When finished, ask them to title their collage. This provides them with an opportunity to reflect upon their work and summarize their intentions.
6. Ask people to describe their collage, including the meaning and significance of the words, pictures, and symbols selected.

Use in: Explore the Vision

Origin: Unknown.

Notes:

DIVERGENT TOOLS

Context Mapping

Benefits

- Achieves a better understanding of external factors and trends around an industry and/or organization.
- Provides a canvas on which to paint a picture of the environment and explore areas for possible insights and opportunities.

Instructions

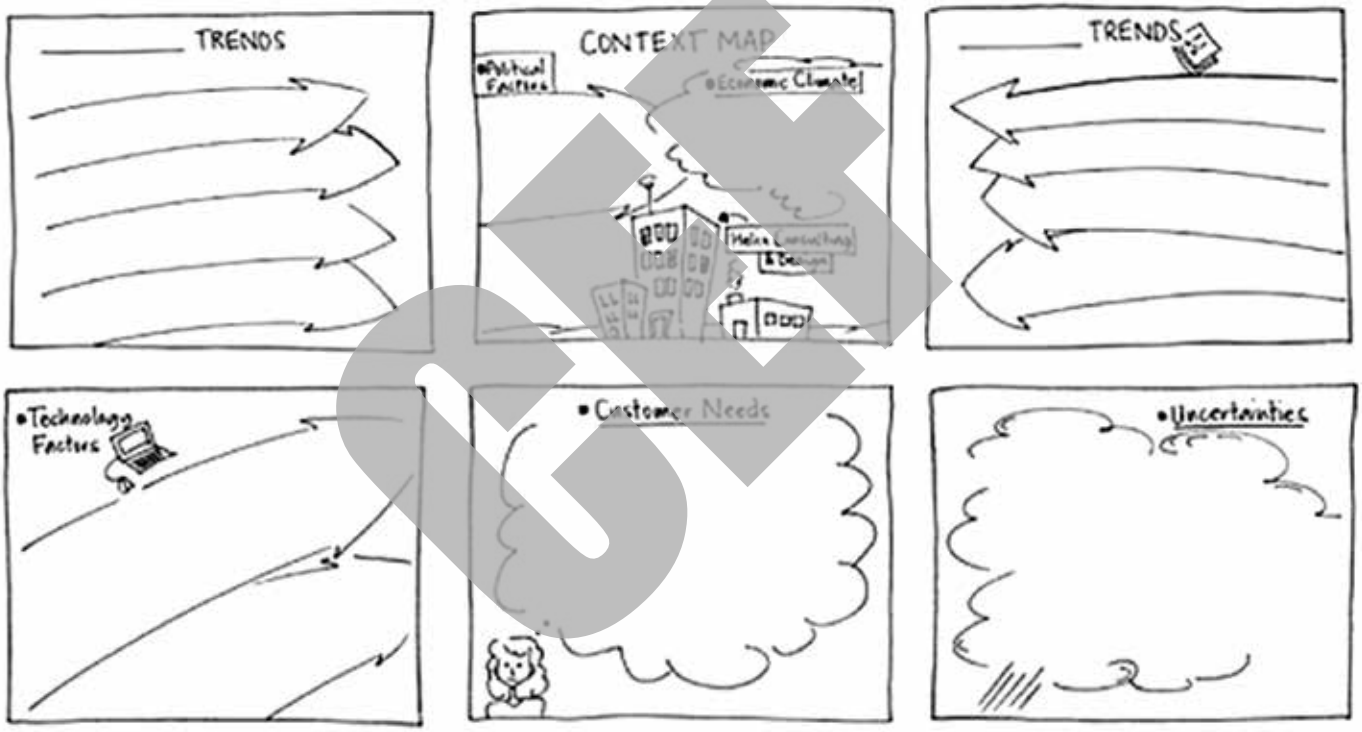
1. **Set-up:** Gather a group of interested participants ranging from 5-20. Expect to engage for 45 minutes to 1.5 hours. Hang 6 flip charts on the wall and draw the following topic areas in them (1 per flip chart). Draw a relevant graphic next to each title to visually support the topic.
2. Explain to the group that the goal is to populate the map in order to get a sense of the big picture in which their organization functions.
3. Saving the two "trends" pages for last, ask participants which area they'd like to discuss first.
   - Have a discussion and share ideas, comments, and information about what is happening in that area.
   - Write the insights down on that flip chart.
4. Move through and populate each of the other areas based on intuition or the guidance of the group.
4. When you're down to the last two "trends" pages, ask the group what trends they'd like to discuss. Label each easel sheet and capture relevant comments on each.
5. Summarize the overall findings with the group and ask for observations, insights, "aha's," and concerns about the context map.

"One of the great joys of life is creativity. Information goes in, gets shuffled about, and comes out in new and interesting ways." — PETER MCWILLIAMS

Use in: Gather Data

Origin: *Game Storming* by Grey, Brown & Macanufo (image from their website) and *Innovation to the Core* by Skazynski and Gibson.

Notes:



DIVERGENT TOOLS

DRIVE

Benefit

- Generate observable criteria by defining the characteristics of a successful outcome and allowing you to recognize your goal once you've achieved it

Instructions

1. **Set-up:** You'll be asking the group the following questions, the keyword in each adding to an acrostic for the word DRIVE.

   D: What do you want your eventual solution to DO? What must it achieve?

   R: What are the RESTRICTIONS, the changes or impacts must you avoid?

   I: What is your INVESTMENT? What resources are you willing to allocate? What are your "not-to-exceeds?"

   V: What VALUES must you live by in achieving your solutions?

   E: What are the ESSENTIAL OUTCOMES? What are the nonnegotiable elements of success? What measurable targets must be met?

2. Put a long sheet of paper on the wall and divide it into five columns.
3. Label each column with the letters from the word DRIVE (each letter has its own column).
4. Make lists in each column using Divergent Thinking:
   - **In the D column:** List all the outcomes /potential solutions you can think of.
   - **In the R column:** List all the things your solution must NOT do. What must you prevent from happening?
   - **In the In I column:** List all the resources you are willing to invest in your target future. Be rigorous and list "not-to-exceed" criteria.
   - **In the V column:** List all the values your organization shares that cannot be comprised by your solution. What are you willing to live with? What are you not willing to live with? Be realistic.
   - **In the E column:** List all things that absolutely must happen for the solution to be a success. What specific targets must be met? What is measurable?
5. Step back and review the grid. Do not worry if there are redundancies. DRIVE is designed to reveal redundancies and overlap. Where necessary, transfer items to appropriate columns.

6. Use Convergent Thinking by choosing the most important success criteria (found in all columns, but most likely there will be many found in column E).
7. Use the important success criteria you select to evaluate your outcomes/potential solutions.

Use in: Explore the Vision, Formulate Solutions

Origin: Hurson, Tim. (2008). *Think Better: The Innovators Guide to Productive Thinking*. New York, NY: McGraw-Hill.

Notes:

D Do - Potential Outcomes	R Restrictions What NOT to do	I Investment of Resources	V Values	E Essential Outcomes

DIVERGENT TOOLS

Empathy Map

Benefits

- Engage challenge owners in conversation and begin the search for relevant insights
- Quickly develop a customer or user profile and identify the unarticulated needs of customers and users
- Provides participants with a level of empathy and understanding of their customers/users or reveals the need to acquire that information

Instructions

1. **Set-up:** Gather the problem owners together in a group of 3-10 participants. Expect 10-20 minutes per map. You can break larger groups into multiple smaller groups and have them explore either the same map or a variety of them. Ask them to identify their customers, users, or anyone else they may find some value in better understanding.
2. Take a flip chart or large piece of paper and draw a head in the center with enough space for writing inside of it; a circle with a couple eyes, mouth, nose, and ears on the side is sufficient (see the center "smiley-face" in the image below).
3. Ask the group to name the person, give them a title, and identify their demographics (age, gender, socio-economic status, etc.). The more detail they provide the easier it will be to get into their mindset.
4. Draw the rest of the flip chart to look like the one below.
5. Ask the group to discuss and answer each of the questions/categories.

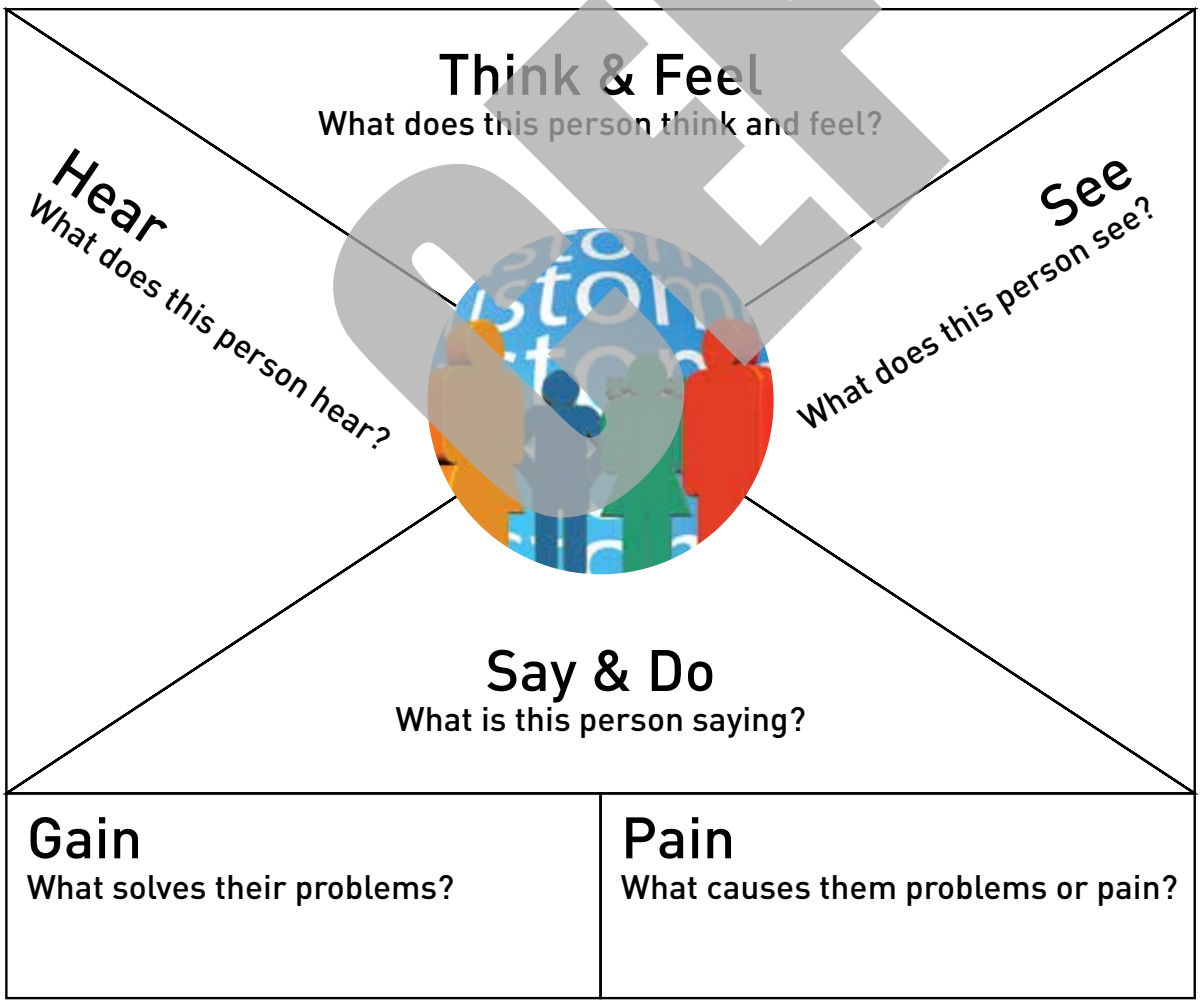
a. Be sure the group is comfortable checking against each other's understanding and perceptions of the person in the empathy map.

6. When they are finished, ask the group questions to explore the space of both understanding the person better and possibly finding insights or opportunities where innovation might occur.
   - How does this person interact with our offering (product, service, experience, outcomes)?
   - What feelings might we provide them that they are not getting and would like?
   - What might they like to see when interacting with our product, service, etc.? Hear? Touch? Think? Say?
   - How might we improve upon this person's experience in ways that they wouldn't think of, but addresses their needs, pain, etc.?
7. Repeat the process with different customers or users.

Use in: Gather Data

Origin: Adapted from *Game Storming* by Grey, Brown, and Macanufo. *Business Model Generation* written by Osterwalder & Pigneur, the connection to using this tool to explore customer insights was inspired by the insight topic area of "Understanding Unarticulated Needs" from *Innovation to the Core* by Skazynski and Gibson.

Notes:



DIVERGENT TOOLS

Forced Connections

Benefit

- Generates unusual and unexpected ideas

Instructions

Choose a random object (toy, orange, rubber band, table cloth), mental image (train, beach), or picture (zebra, a Monet, flower). There are two approaches you can use to generate ideas.

Approach 1:

Relationships

1. Ask, "When you look at (or think of) this thing, what ideas come to mind for addressing this challenge?"
2. Ask, "In what ways is the challenge like (the object, image or picture)?"
3. After you come up with some relationships, generate ideas these relationships stimulate.

   For example: "*The challenge is like an orange because it has a number of inter-connected sections." This might stimulate ideas to discover what holds the section together, look at each of the sections individually, or remove the barriers and create a seamless whole.*

Approach 2:

Characteristics

1. Brainstorm characteristics of the object.

   For example: *Ask yourselves, "What are the elements of this item and what else does it make me think of?"* Response: "*A table cloth may be smooth, white, foldable, soft, stain-resistant, woven, etc." The more characteristics you can generate, the better.*

2. Think about how each characteristic can stimulate new thinking around your challenge.

   For example: *"What new ideas can you create if you think about folding your challenge to make it smaller or adding a resistant characteristic to make it stronger?"*

Use to: Explore Ideas

Origin: Parnes, S. Gordon, W.J.J. (1971). *The Basic Course in Synectics*. Cambridge, MA: Porpoise Books. Geschka, H. (1980). *Methods and Organization of Idea Generation*. S. Gryskiewicz.

DIVERGENT TOOLS

Give & Take

Benefits

- Provides an opportunity for a team to discuss their goals for the session and what they hope to take-away from it
- Helps with teambuilding since exercise is done in pairs

Instructions

1. Have participants form teams of two.
2. Each team draws a line down the middle of an 8.5 x 11 piece of card stock to create two columns.
3. At the top of the first column write "take."
4. At the top of the second column write "give."
5. Allow each team three minutes to brainstorm and list everything they hope to "take" from the session.
6. At the three-minute mark, refocus the teams to list everything they hope to "give" to the session.
7. Facilitator debriefs the larger group by fist listing the "gives" on an easel.
8. Facilitator then lists the "takes" on an easel.
9. The gives and takes should be prominently displayed in the room during the session.
10. At session wrap-up, the facilitator returns to the "takes" and debriefs the groups by asking what areas they feel have been successfully covered and what areas need to be considered for future sessions.

Use in: Explore the Vision

Origin: Tim Hurson.

Notes:

DIVERGENT TOOLS

Group Doodle

Benefits

- Creates an abstract, participant-generated image from which to access feelings or ideas
- Allows participants to use visual stimuli as a springboard for reflection and discussion
- Adds energy to the process through the use of a creative, kinesthetic activity

Instructions

1. Invite participants to spread out around the writing surface and grab a writing implement/color that appeals to them.
2. At your signal, participants should simply begin doodling anything (a favorite drawing, a scribble, an icon, sudden inspiration, etc.).
   - After about two minutes, have participants move 2 places to their right and doodle on and around what's in front of them.
   - After about one minute, rotate 2 more places to the right, and continue doodling.
   - Continue (adding variations as desired) until the surface is covered. Make sure you stop when energy is high…don't drag it on too long.
3. Have participants stand back and look at the doodle to find something in it that reminds them of the topic (either shows how they think or feel about it), and then share those feelings.
4. Capture new ideas/thoughts on post-its or an easel for easy review.
5. Variations: Encourage participants to think differently:
   - Doodle small; doodle big.
   - Doodle with your "other" hand.
   - Change colors or implements.
   - Fill in some white space; make some connections between doodles.

Use in: Explore the Vision and Explore Ideas

Origin: Unknown.

Notes:

_____

_____

Add an ipod holder, so you're listening to music while you're vacuuming. BUILD: Add a muffler to the vacuum, so you're only listening to music.

Add inflatable cushions around the edges, like airbags, to protect my furniture.

Set a timer (like on coffee pots) so floors are cleaned while I sleep.

"Of all the gifts we have as humans, the one that stands out, giant-like above all the rest, is our ability to be creative. It is responsible for all the progress we enjoy today." — SIDNEY PARNES

DIVERGENT TOOLS

Invitational Language Stems

Benefits

- Orients the brain to generate options
- Frames the situation by inviting solutions to explore options and ideas, rather than shutting down conversations with a traditional statement
- Uses stems that ask for open-ended information to start responses while generating or diverging when using the Creative Problem Solving process

  For example: *By starting the concern about cost with "How to …," you naturally begin to generate ways to overcome the concern about cost:* "How to make it less expensive?" *or* "How to obtain funding from other sources?"

Use when you need to:

Explore the Vision	• It would be great if…(IWBGI) • I wish…(IW)
Formulate the Challenge	• How to…(H2) • How might…(HM) • In what ways might we…(IWWMW)
Explore Ideas	• Will it…(WI) • Does it…(DI) • What I see myself doing is…(WISMDI) • What I see us doing is…(WISUDI)
Formulate Solutions	• Now what I see myself doing is…(NWISMDI) • Now what I see us doing is…(NWISUDI)

Origin: Isaakson, A. Treffinger, D. (1985). *Creative Problem Solving: The Basic Course*. Buffalo, NY: Bearly Limited.

DIVERGENT TOOLS

Mindmapping

Benefits

- Encourages an explosion of associations by creating a nonlinear diagram that shows how items are linked to and radiate from a central thought through associations, feelings, and ideas
- Can be done as an individual or group exercise, or a group of individuals

Instructions

1. In a circle in the middle of the page, write the topic.
   - Draw a short line radiating out from this circle and ask yourself or your group "what do you think of when you think of this?" – put the responses at the end of that line.
   - Draw another short line radiating out from the center circle, and ask yourself or your group "what else do I think of?" Do this a few more times, pushing in different directions.
2. At any time, go to one of the thoughts written down, and ask "what do you associate with this?" and draw a line radiating out from this word and write this new thought down.
3. Continue encouraging your group to add more associations, connected with a radiating line from whatever sparked that thought, anywhere on the mindmap they want. The goal is to build chains and connections stemming from the central topic.

   Prompts:

   - Free associate. Don't censor your thoughts. Keep adding. Go! Go! Go!
   - Take each branch out as far as possible, with at least a few connections built on each main thought.
   - Fill your paper; fill the white space.
   - Try using a different color. Create your own code.
   - Use icons or stick figures instead of words.
   - What emotions are you connecting with thoughts/ideas on your map?
   - What people do you connect with the thoughts/ideas on your map?
4. Ask the group to take a step back: Review the map. Circle or highlight an area of the map that is intriguing, that offers a new connection, or you'd like to think more about
5. ***Variations:***
   - **Explore the Vision:** Put the ideal future state in the center circle (I am 30

lbs. thinner; sales are up 30%; I am an entrepreneur). Learn how that goal is dimensionalized.

- **Gather Data:** Put the situation in the center (I feel fat; sales are flat; I hate my job). Prompt yourself with WWWWW&H. Learn more about the situation.
- **Explore Ideas:** Put the challenge statement in the center (how to stick to a diet; how to gain new customers; how to own my own business). Let your mind go with possible ideas, and connections/builds on those ideas.
- **Formulate Solution:** Put an idea in the center. Learn your reactions, fears, excitement and even some new challenges or new ideas associated with the first idea.

Use in: Explore the Vision, Gather Data, Explore Ideas, and Formulate Solutions

Origin: *Mind Mapping, Mindmap* and *Mind Map* are registered trademarks of the Buzan Organization.

Notes:

"Mind Maps are the meta-language of the human race." — TONY BUZAN

DIVERGENT TOOLS

Morphological Analysis (aka Idea Box)

Benefit

- Helps group develop additional/novel ideas by combining the output in random or not so random ways

Instructions

1. Have the group select the challenge ("How to…" or "What might be all the…").
2. Have the group ideate on the parameters (for example: guy stuff, flavor directions, drink type) listing them in different columns.
3. Have the group diverge and list variations or options under each parameter.
4. Using Highlighting, have the group converge on each list to pick the top, most interesting or intriguing options.

Use in: Explore Ideas

Origin: Unknown.

Notes:

Example:

New ideas for packaged, alcoholic beverage geared toward young males: Pamplona Punch and Lemon Stinger.

"Guy Stuff"	Flavor Ideas	Drinking Words
Extreme Sports	Hot Pepper	Imbibe
Cigars	Meaty, Beefy	Mixer
Dirty Jokes	Vodka	Punch
Harleys	Beer	Chiller
Leather Jackets	Fruity	Dew
Tools	Salty	Nuectar
Running with the Bulls in Pamplona	Minty	Fizz
Skydiving	Spicy	Ripple
Deep Sea Fishing	Indulgent Creme	Hydrate
Dirty Harry	Coffee / Expresso	Sauce
Big Game Hunting	Citrus	Slush
Workbench	Sangria	Sip
Fast Cars	Ice Cream	Venom
	Sweet Savory	Ade

DIVERGENT TOOLS

Pictures as Metaphors

Benefit

- Explores a wish, idea, or solution in more depth

Instructions

1. Set-up: Select an assortment of pictures for the group to use that represent a wide range of images, emotions, or feelings. Remember that a metaphor allows someone to use one thing (in this case what's represented in a picture) to explain his or her perception of another thing (a wish, idea, or solution). The pictures you choose set the parameters for participants' connections, care should be taken to ensure the set of pictures is objective and broad:
   - Represent a wide range of possibilities. For each picture you choose, challenge yourself to find an opposite image or feeling to insure a broad spectrum.
   - Choose pictures that evoke emotions or stories.
   - Avoid choosing pictures that are related to the topic in any way (e.g., avoid pictures of children or kitchens when exploring play kitchens), as these will produce only literal or rational responses.
2. Tell participants that they will be looking at a collection of pictures that represent a wide variety of feelings, attitudes, and/or images.
3. Invite everyone to review all the pictures and choose one that best represents the topic to them. What it represents should be changed based upon the topic being explored. (See Applications.)
4. Allow each person to describe the picture they chose, and what they perceive the connection is to the topic.
5. Variations: Participants may choose two pictures to represent two different sides of the topic, such as a picture that represents the present and one that represents the future.

Use in: Explore the Vision, Explore Ideas, and Formulate Solutions

Origin: Unknown.

Notes:

_____

_____

DIVERGENT TOOLS

POINt
(Pluses, Opportunities, Issues, & New Thinking)

Benefit

- Helps group objectively evaluate and develop the full potential of an idea

Instructions

1. Ask the group to choose one idea that best meets the criteria that was established for selection to star. Note: Its encouraged to repeat this process with subsequent ideas.)
2. First, have the group create a list of "Pluses" – what you like about the idea, its strengths, positives, good points, all the pros NOT the cons
3. Next, have the group generate a list of "Opportunities" – ask the group what possibilities might this new idea open up? What might be potential spin-offs in the future? What are the most novel aspects of this idea? What serendipitous thing might happen if we implement this idea?
4. Then, record a list of "Issues" or concerns they may have with the idea, weaknesses, trouble spots, the cons – but be sure to express your concerns as open-ended questions that start with "How to … " or "How might we … " or "In what ways might we … " so that you open-yourself up to problem-solving these concerns if the idea shows great potential
5. Finally, it's time for "New thinking":
   - Review your list of issues/concerns and choose the most critical.
   - Brainstorm ways you could overcome that issue.
   - Repeat sub-steps a and b for each issue recorded in Step 4 until you've generated several ways to overcome critical concerns.
6. Repeat this entire process (Steps 1 – 5) for each idea that you converged upon when you ideated. Ultimately, you'll need to determine if you are going to move forward with or table each idea you develop.

Use in: Formulate Solutions

Origin: Miller, Vehar, and Firestien, 2001.

Notes:

DIVERGENT TOOLS

Post & Cluster

Benefit

- Helps group generate ideas in a way that makes converging easier to accomplish

Instructions

1. Instruct participants that only one piece of data or idea is allowed per sticky note. All ideas should be written in headline form, limited to a maximum of 5-6 words.
2. Ask for one Post-It to be read out loud, and then post it.
3. Ask if anyone else has something very similar to the first one. If so, ask that it be called out and post it next to the first one.
4. Continue until no more data/ideas of that topic are expressed.

   Watch out: Keep topic areas tight; don't allow data/ideas that are only somewhat related to be added. Start a new cluster for data/ideas you feel are sufficiently different.
5. Ask for a sticky note on a different topic and add to it as described above until all Post-its are posted.
6. Name each cluster such that the name summarizes the data/ideas contained within.
7. ***Variation:*** If data/ideas are already posted, send individuals or small groups to the boards where posted and ask them to group similar data/ideas and name the cluster.

Use in: All steps of CPS when engaging divergent thinking

Origin: Unknown.

Notes:

DIVERGENT TOOLS

SCAMPER

Benefits

- Helps groups break out of ruts during divergence
- Generates more ideas
- Combines easily with other divergent tools

Instructions

1. Use SCAMPER (the mnemonic for Substitute, Combine, Adapt, Modify, Put to other uses, Eliminate, Rearrange) to stimulate new ideas while facilitating brainstorming.

   Substitute: What can we substitute? Are there parts, materials, ingredients, or segments that can be swapped in? Who else might be included instead? What other process might be used instead? Might we substitute something that doesn't belong here?

   Combine: What might be combined or blended? What sort of ensemble could be used or created? Might we combine parts or materials? How might we combine purposes? What products or processes will fit well together? How might we combine applications?

   Adapt: Can something be brought over to work in this context? Can we borrow an idea from a competitor or another industry? Does the past offer a similar situation?

   Modify (Magnify or Minimize): How might we change the form (color, size, weight, shape)? What might we add, lengthen, strengthen, or subtract? How might we increase the value? What might we streamline? What might we change from the process, price, strategy, or offering? What might we increase or decrease the significance of?

   Put to other uses: What else might it be used for? How might the product be used to work for a different market? What might we take somewhere else to improve life?

   Eliminate: What might we get rid of or omit? What might we stop doing instead of fixing it? How might we simplify the process by removing steps? What might we get rid of to reduce complexity?

   Rearrange: What other patterns, arrangement, or layout might work? What might we reverse or transpose? How might we reverse engineer it? How might we change the focus to look at it backwards first? What if we turned it inside out or upside down?

Use to: Explore Ideas

Origin: Eberle, R. (1971). *SCAMPER: Games for Imagination Development*. Buffalo, NY: D. O. K. Publishers.

DIVERGENT TOOLS

Storytelling

Benefit

- Hear/learn how stakeholders think or feel about their current reality or desired future state

Instructions

1. Invite participants to tell a story about "X" (what life is like now; your current situation; what you're facing; what you're challenged with; how you'd like things to be; what would be ideal; what you're working toward; where you see yourself "X" years from now).
2. Specify a story length (e.g., not less than a paragraph but not longer than two pages) and/or the amount of time that should be taken to write (15 min, an hour).
3. Specify elements to include:
   - People involved
   - Sense of place (setting/location)
   - Happenings (occurrences/action)
   - Thoughts and feelings relative to the above
4. Direct participants need to be as specific as possible (i.e., include events and specific outcomes, not simply generalities).

Use in: Explore the Vision, Gather Data, Formulate Solutions

Origin: Unknown.

Notes:

_____

_____

_____

_____

"The human species thinks in metaphors and learns through stories." — MARY CATHERINE BATESON

DIVERGENT TOOLS

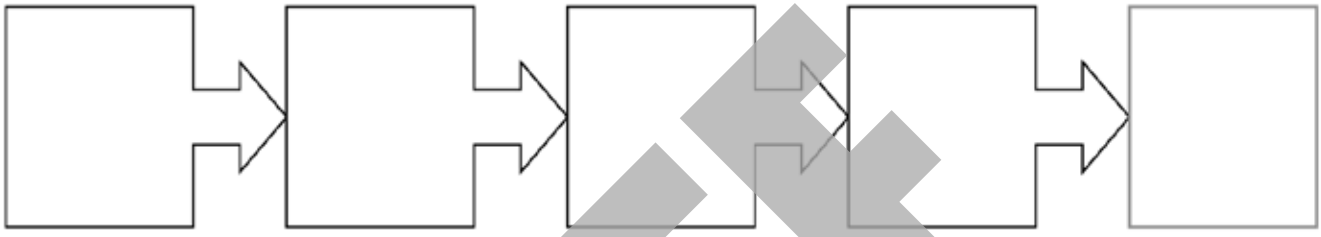
Storyboarding

Benefit

- Hear/learn how stakeholders think or feel about their current reality or desired future state in terms of a sequence of events

Instructions

1. **Set-up:** Create a full-page template containing 3-6 frames:



2. Have stakeholder(s) describe/illustrate the life/current situation in the first frame.
3. Have stakeholder(s) describe/illustrate the goal/ ideal future state in the last frame.
4. In the frames in-between, describe/illustrate what it will take to move from the first to the last frame.
5. Specify elements to include:
   - People involved
   - Sense of place (setting/location)
   - Happenings (occurrences/action)
   - Thoughts and feelings relative to the above
6. Direct stakeholder(s) to be as specific as possible (i.e., include events and specific outcomes, not simply generalities).

Use in: Explore the Vision, Gather Data, and Formulate Solutions

Origin: Unknown.

Notes:

_____

_____

DIVERGENT TOOLS

Visual Excursion

Benefits

- A useful tool to reenergize a group during a brainstorming session and continue to elicit new ideas
- Generates novel and unusual ideas by working with metaphors

Instructions

1. Collect a series of intriguing visuals to use as stimuli. Use toys, objects in the room, or pictures. Pictures should not be readily identifiable.
2. Ask participants to relax and go on a mental excursion.

   Script: *"Allow your mind to drift away from the challenge and float to your favorite vacation spot. Focus on what it looks like, smells like, sounds like, and feels like. Notice the rich colors and beautiful weather."*
3. Come back and focus on the object. Write down any three observations, impressions, reactions, or thoughts about the object. Don't edit yourself. Record your observations.

   Prompts: *"What do you see? What do you feel like? What would it be like if you were here? What memories have you had like this? What experiences have you had like this? What might this taste/sound/smell/feel like?"*
4. Repeat step 3 with each visual stimulus.
5. Take each of your observations and make a connection to the challenge. Each connection should answer, ***"My challenge is like (name of stimulus) because...."*** Record your connection on post-its (one connection per post-it).

Use to: Explore Ideas

Origin: Parnes, S. Gordon, W.J.J. (1971). *The Basic Course in Synectics.* Cambridge, MA: Porpoise Books. Geschka, H. (1980). *Methods and Organization of Idea Generation.* S. Gryskiewicz.

DIVERGENT TOOLS

Visualization

Benefit

- Reflect upon experience, present state, wishes, goals and ideas

Instructions

1. **Setup:** Play soft music for mood setting.
2. Tell participants that you are going to guide them through visualization – in order that they may reflect on things happening in their lives and/or their hopes for the future.
3. Ask them to get as comfortable as possible, to close their eyes or to look down if that is more comfortable for them, and to relax (include suggestions re: deep breathing and decreasing muscle tension).
4. Use a script or outline that walks participants through various issues to consider. Speak slowly, allowing time between prompts for reflection.
5. After, ask them to spend a minute writing down any piece of the experience that was particularly significant, or that they don't want to forget. Alternatively, give periodic breaks during the visualization to allow them to write down significant thoughts or feelings.

Use in: Explore the Vision, Gather Data, and Explore Ideas

Origin: Unknown.

Notes:

"Dare to visualize a world in which your most treasured dreams have become true." — RALPH MARSTON

DIVERGENT TOOLS

Wall of Don't

Benefits

- Generate ideas by exploring the opposites
- Useful when idea production has slowed down

Instructions

1. Direct the participants to approach the wall and pick up a colored marker.
2. Ask participants to write down ideas that would NEVER work to solve the challenge – the exact opposite of what they think would be a good idea. Ask them to write down REALLY BAD ideas!
3. After a few minutes ask them to move one place to the right, pick up a different colored marker, and build off their neighbor's bad ideas.
4. After a few rotations, have participants pick up a pack of sticky notes and springboard off the bad ideas to make good, workable ideas – turn lemons into lemonade!

Use in: Explore Ideas

Origin: Unknown.

Notes:

DIVERGENT TOOLS

Why, What's Stopping You?

Benefit

- Helps you develop additional challenge questions by getting to root cause and effect

Instructions

After generating a number of challenge questions or when production of challenge questions slows down:

1. Direct the challenge owner to look over the list and identify one challenge question of particular interest – one that seems to address his/her issue.

   Label the question as "A" and ask:

   - Why is this an important challenge to solve?
   - What would be the outcome if it were solved?

2. Turn each response into another "how to" question.

   For the newly resulting "how to" question, repeat the above questions, such that you are generating even more "how to's."

3. Continue this line of probing until response becomes too abstract and/or too far removed from the issue.
4. Return to the original challenge question ("A") and ask the challenge owner:

   - What's stopping you from doing/achieving that now?

5. Turn each response into another "how to" question.

   For the newly resulting "how to" question, repeat the above question, such that you are generating even more "how to's."

6. Continue line of probing until response is too far removed from the issue.
7. Return to the original list of questions and repeat for another question that the challenge owner identifies as interesting/meaningful.

Use to: Formulate the Challenge

Origin: The notion of extracting different levels of abstraction can be traced to the work of S.I. Hayakawa in 1978, which was based on the work of A. Korzybski in 1933. Further work done by:

Parnes, S. (1997). *Optimize the Magic of Your Mind.* Buffalo, NY: Bearly Limited.

Isaksen, S., Dorval, B., & Treffinger, D. (2000). *Creative Approaches to Problem Solving: A Framework for Change (2nd. Ed.).* Williamsville, NY: Creative Problem Solving Group-Buffalo.

Basadur, M. (1995). *The Power of Innovation.* London, Great Britain: Pitman Publishing.

EXAMPLE

A sense of accomplishment builds my business confidence ->
How to build my business confidence?

Being more productive will help me feel a sense of accomplishment each day ->
How to feel a sense of accomplishment each day?

Because I will be more productive in an organized office ->
How to be more productive in my home office?

A. How to better organize my office?

Because I don't have an organizational system in place ->
How to find an organizational system for my home office?

I don't have time to research the best system ->
How to carve out time to research home office systems?

I'm completely over-extended with my current project load ->
How to build more time into my schedule?

DIVERGENT TOOLS

Word Dance

Benefits

- Generates more challenge questions and stronger challenge questions
- Reveals assumptions and generates alternative views

Instructions

1. Rewrite the challenge question at the top of a sheet of paper.
2. Circle the verb or action in the question.
3. Write that word below, then generate a list of alternates.
4. Circle the object or outcome in the question.
5. Write that word below, then generate a list of alternates.
6. Mix and match to make new challenge questions with the verbs and objects to create a better version of the challenge question that invites even more ideas.

Example

Challenge Question: How might I open a restaurant?

Open: launch, revive, begin, start, embark upon, initiate, kick off, set in motion, start the ball rolling

Restaurant: dining experience, business establishment serving food, cafeteria, eatery, grill, greasy spoon, luncheonette

Alternate Challenge Statements:

- How might I embark upon a business establishment serving food?
- How might I launch an eatery?
- How might I initiate a luncheonette?

Use to: Formulate the Challenge

Origin: Parnes, S. (1967). *Creative Behavior Guidebook*. New York: Scribner.

Convergent Tools

CONVERGENT TOOLS

3 "I"s (Influence, Importance, Imagination)

Benefit

- Helps evaluate whether a goal, wish, challenge, or opportunity is appropriate for you or your group to address

Instructions

1. Do you (or your group) have **Influence** over the challenge? If the challenge is something completely out of your control or authority, you may not want to spin your wheels on it.
2. Is the challenge of **Importance** to you (or your group)? Are you motivated to address it, and will you have the energy to carry your solution through?
3. Does the challenge require **Imagination**? Will it call for new thinking or an innovative solution?

If you can answer "yes" to all three of these questions (Influence, Importance, Imagination), the situation will probably benefit from CPS.

If your answer to any of these questions is "no," you may want to think about redefining your challenge in a way that does meet the 3 "I"s criteria, or perhaps working on a different challenge.

Use to: Generate Ideas, Explore the Vision, and Formulate the Challenge

Origin: Based on the work of Bill Shephard, Roger Firestien, Don Treffinger, and Scott Isaksen.

"Creativity takes courage." — HENRY J. KAISER

CONVERGENT TOOLS

ALU
(Advantages, Limitations, Unique Potential)

Benefit

- Quickly select between two strong ideas

Instructions

Taking a closer look at each of two ideas your group might move forward with:

1. Starting with one of the two ideas, create a quick list of "Advantages." List only the pros and NOT the cons.
   - What do you like about the idea?
   - What are its strengths? Its positive attributes?
2. Record a quick list of "Limitations" but be sure to express the concerns as open-ended questions that start with "How to … " or "How might we … " or "In what ways might we …" so that the group is open to problem-solving these concerns if the idea shows great potential.
   - What are the issues or concerns with the idea?
   - What are the weaknesses? Trouble spots? Cons?
3. Have the group generate a list of "Unique Connections."
   - What is the blue sky potential of this idea?
   - What greater connection can you make into the world of "what if" and possibilities?
4. Repeat Steps 1-3 with the other idea under consideration.
5. Consider the "Unique Connections" and use that possibility to determine which idea to implement.
   - What compelling potential does one idea possess that the other does not?
6. Repeat Steps 1 – 3 with the other idea under consideration. Finally, consider the "Unique connections" – ask the group what compelling potential does one idea possess that the other does not? Use that possibility to determine which idea to implement.

Use in: Formulate Solutions

Origin: Treffinger and Isaksen (1985).

Notes:

_____

_____

CONVERGENT TOOLS

Dot Voting (Hits)

Benefit

- Useful when you have a large group of people who need to work together to build consensus and converge on options

Instructions

1. Review all items that were generated to ensure a shared understanding.
2. Give each person dot stickers. Everyone should have the same number of dots (or you can instruct everyone to make a mark).
3. Have everyone place a dot (or make a mark) beside the option they like best. (Ask people to choose first, then write them down, before they go up to place their dots beside their favorite ideas/options to avoid "group think").
4. Look for clusters with the most dots or "Hits." The clusters with the most "Hits" are the options that should be worked on first.

Hits are items that

Are on target	Jump off the page
Are relevant	Excite you
Are clear	Sparkle at you
Are interesting	Feel right
Intrigue you	Solve the challenge
Seem workable	Go in the right direction

Use in: All steps of CPS when engaging convergent thinking

Origin: The characteristics of a "Hit" were first presented by Roger Firestien and Donald Treffinger in the *Journal of Creative Behavior* (Vol 17, no. 1, 198).

Notes:

CONVERGENT TOOLS

Evaluation Matrix

Benefits

- Creates a systematic way to analyze multiple solutions
- Helps build consensus as it allows the group to select and evaluate a variety of promising solutions against selected criteria

Instructions

After generating a number of possible solutions:

1. Generate criteria. Make a list of criteria to use to evaluate potential solutions (i.e., within our budget or will appeal to the target).
2. Choose the criteria that are most important or most influential for your decision.
3. Put the criteria into positive question form, so that answering YES gives the criteria a positive response.

   For example: *The answer should be YES when asked, "Will it be ___?" Write it as* "Will it be within our budget?" *rather than* "Will it be too expensive?")
4. Create a matrix, with the key criteria heading various columns. Simple challenges might have 3-4 criteria; more complex challenges might have more.

	Will it be within budget?	Will it be finished on time?	Is is revolutionary?
Option A			
Option B			

5. Use a simple rating system to indicate how well an idea satisfies each criterion.
   Potential rating systems:
   - Smiley faces: a frown doesn't satisfy; a horizontal line sort of satisfies; a smile satisfies a lot.
   - Scale of 1-5 where 1 doesn't satisfy the criterion and 5 completely satisfies it.
   - Satisfies = **+;** in the middle = **o;** doesn't satisfy = **–**.

6. Fill in the matrix one column at a time, comparing the solutions to each other against one criterion. This leads to increased objectivity and focus.
7. When you have filled in the entire matrix, you can get a sense of how your ideas stack up against each other.

   You are not conducting a mathematical exercise; you are looking for an overview.
8. Go back again, column by column, and see how you can strengthen each idea to improve its rating.

Once you have gone through the matrix a second time, select those ideas that perform best against the criteria for further development.

Use to: Formulate Solutions

Origin: Parnes, S. (1967). *Creative Behavior Guidebook*. New York: Scribner.

Notes:

"Creativity is allowing yourself to make mistakes. Art is knowing which ones to keep." — SCOTT ADAMS

CONVERGENT TOOLS

Highlighting

Benefits

- Helps you narrow down and focus on what is important
- Helps to screen, select, and sort ideas that are interesting, intriguing, or useful
- Gives a first pass-through for converging a list of ideas
- Condenses a large number of ideas into more meaningful or manageable categories

Instructions

1. Review all the ideas generated during the divergent steps. Keep in mind the Convergent Thinking Guidelines.
2. Have each participant mark the ideas that are "hits" (exciting, interesting, jump off the page) with either sticky dots, a magic marker, or by removing the sticky note (with the idea on it) to another location.

   Tip*: Give guidelines about how many ideas should be marked based on:*

   - The total number of ideas you're working with.
   - The depth and breadth of ideas.
   - Tow many you want to consider taking into the next step.

   For example*: With 100 ideas, you might ask each person to mark 3-5; with 20 ideas, you might ask everyone to mark 1-2.*
3. Identify all the ideas that relate to each other thematically and group them together on a clean page in clusters. Create a short 1-3 work headline for each cluster.
5. Restate the hot spots appropriately (as a problem statement, an idea, etc.).
6. Make sure that the cluster is restated specifically enough to be useful. If you are looking for ideas, make sure the restatement is stated as an idea. If it's a challenge question, make sure it has an appropriate **"How to..."** or similar stem on it.

Use in: All steps of CPS when engaging convergent thinking

Origin: Highlighting is a form of clustering. Driver, H. Kroeber, A. (1932) *Anthropology*. New York: Brace and Company.

Notes:

CONVERGENT TOOLS

How-How Diagram

Benefit

- Generate steps or actions needed to implement a solution

Instructions

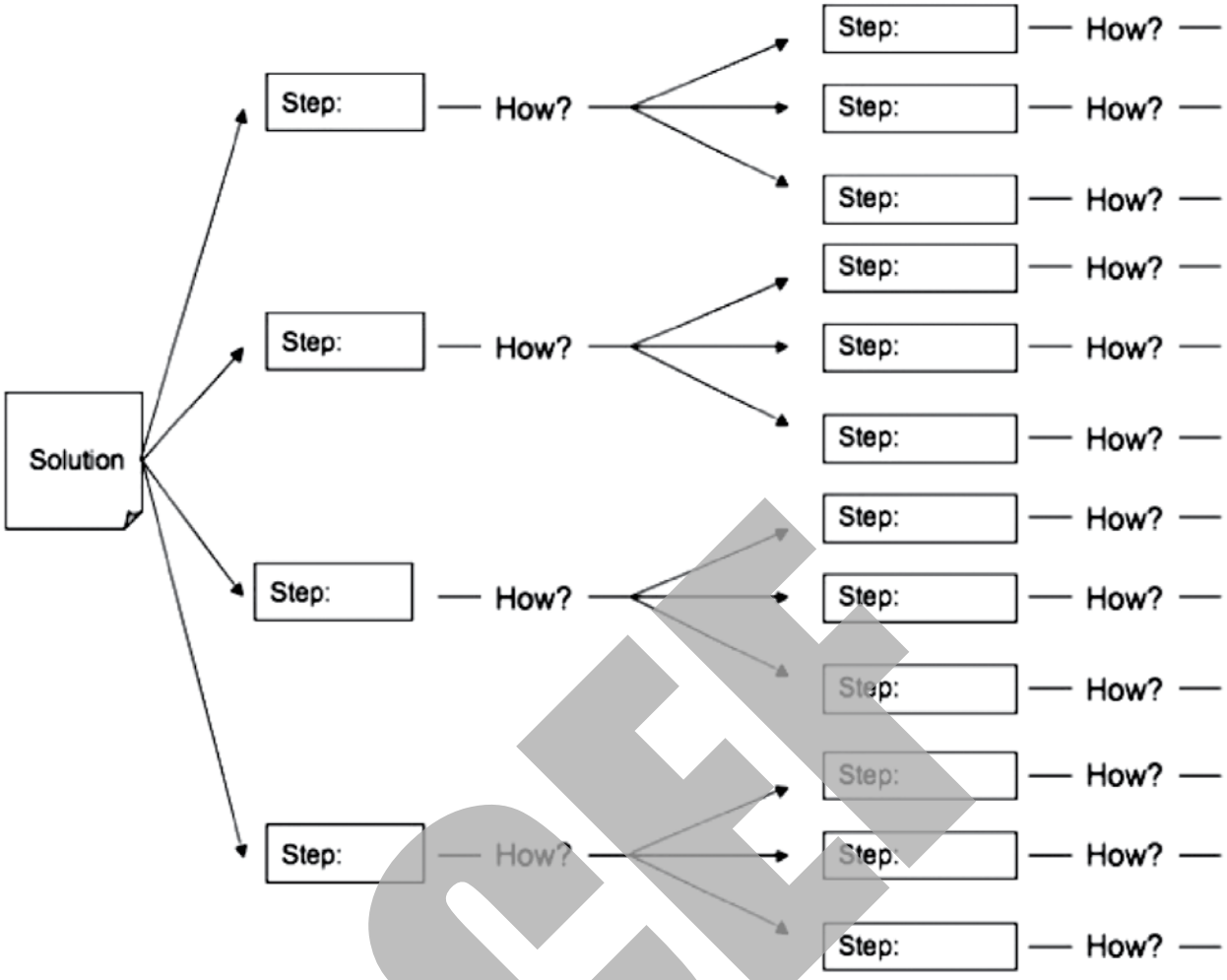
1. Place a solution on the left side of a piece of paper, with plenty of room to work to the right.
2. Have the group identify the initial steps needed to implement the solution and write them to the right of the solution.
3. Consider each step individually, breaking it down into its detailed stages by repeatedly asking how it might be achieved. Record each stage in the appropriate place to the right of the diagram.
4. Continue the process until each step has been drawn out to its logical limit.
5. Examine the complete diagram for recurring elements that tend to indicate the most crucial stages in the process of implementation.

Use in: Formulate Solutions

Origin: Unknown.

Notes:

"It is not enough to stare up the steps, we must step up the stairs." — VACLAV HAVEL



CONVERGENT TOOLS

Pair & Share

Benefit

- Helps develop ideas that appear to have promise for further discussion or development

Instructions

1. **Set-up:** Allow 30-60 minutes for this tool. Each participant reviews the list of ideas (or wishes or questions) that have been generated and selects the three that seem most important or worth pursuing by having each participant write his or her top three ideas on an individual notepad. Depending on how many people are participating, adjust the exercise until each team doubles each round until the whole group is together. Once that happens, the whole group votes on the top three ideas.
2. Ask participants pair up to form dyads. (Or use a grouping exercise to create pairs.)
   - In those dyads, the participants discuss their collective six ideas.
   - Together, they choose between them the three ideas they agree are most important or worth pursuing.
   - Each dyad writes their top three ideas on a notepad.
3. Each dyad then pairs up with another dyad to form quads.
   - In those quads, they discuss their collective six ideas.
   - Together, they choose between them the three ideas they agree are most important or worth pursuing.
   - Each quad writes their top three ideas on a notepad.
4. Each quad then partners up with another quad to form groups of eight.
   - Each group of eight discusses their collective six ideas.
   - Together, they choose between them the three ideas they agree are most important or worth pursuing.
   - Each group of eight then writes their top three ideas on a notepad.
5. Depending on how many people are participating, continue until the whole group is together. If there are only 16 people participating, it's time for the group to discuss then choose the top three ideas. If there are more than 16 people participating, you might need to conduct a few more iterations before the entire group has come together and agreed on its top three ideas.

Use in: Formulate Solutions

Origin: Sid Parnes, Horst Goeschka, and Marcia Steele.

Notes:

"A smile is the light in your window that tells others that there is a caring, sharing person inside." — DENIS WAITLEY

CONVERGENT TOOLS

PPCO (Pluses, Potentials, Concerns, Overcoming concerns)

Benefit

- Strengthens or evaluates an idea
- Avoids premature idea-killing by using the principle of "Praise First"
- Develops ways to overcome an idea's weaknesses
- Works on single ideas
- Creates motivation by looking at ways to overcome challenges

Instructions

1. **Pluses:** Make a list of at least three pluses, likes, or specific strengths of your idea by answering: What is good or unique about your idea now?
2. **Potentials:** Make a list of at least three opportunities starting with, **"It might ..."** What are speculations, spin-offs, or possible future gains from your idea? What are the ultimate potentials of this idea/what could it eventually lead to? What opportunities might result if your idea were implemented?
3. **Concerns:** Make a list of all concerns you have about your idea by answering "What concerns are there about this idea?" Phrase your answers in the form of a question starting with, **"How to ...,"** or **"How might ...,"** or **"In what ways might ..."** This invites solutions for how to overcome each one of these concerns, eliminates negative words/phrases.

   For example*: If you're concerned about the idea being too costly, say:* "How to make it affordable?" *not* "It'll cost too much" *or* "How not to make it so expensive?" *This allows for improvement of the idea.*
4. **Overcome:** Generate ways to overcome concerns one at a time, in order of their importance.
5. Modify and strengthen the original idea by leveraging the Pluses and Potentials, and incorporating the newly brainstormed ideas to Overcome the Concerns.
6. Write an improved statement of your solution: ***"Now what I see myself (us) doing is ..."***

Use to: Diverge/Converge, Explore Ideas, Refine Preemptive Feedback

Origin: PPC was developed by Diane Foucar-Szocki, Bill Shepard, and Roger Firestein, although it dates back to Aristotle, who advocated looking at pluses and minuses of any ideas. It later was evolved by Hedria Lunken who added the "O" to PPC — to deliberately include brainstorming ideas to overcome each concern.

CONVERGENT TOOLS

Problem Police

Benefit

- Ensures effective, workable problem statements

Instructions

1 For each problem statement ask the group the following:

- Is the problem stated affirmatively.
- Is the problem not burdened with criteria (Note: Criteria may be concerns that can be overcome later in the process. Having too many criteria in the problem statement can limit Divergent Thinking. If there are criteria, turn them into affirmative problem statements using How to…or How might we…statements).
- Contains an owner, an action, and an objective/area of concern.

Use to: Formulate the Challenge

Origin: Unknown.

Notes:

"Nothing is more dangerous than an idea when it is the only one you have." — EMILE CHARTIER

CONVERGENT TOOLS

Targeting

Benefit

- Helps group compare a current state of affairs to an ideal state and to identify what needs to happen in order to reach that goal

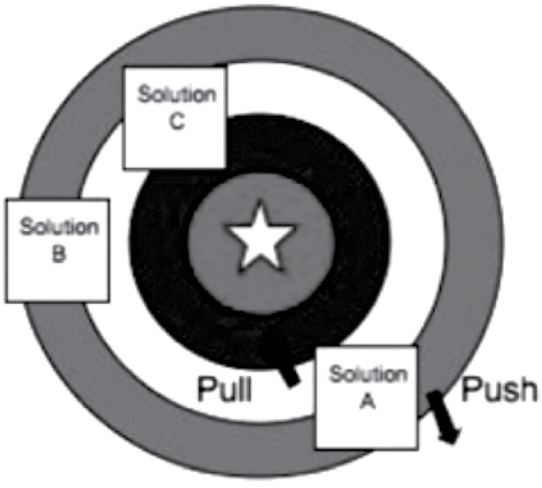
Instructions

1. Draw a target.
2. Put each solution generated by the participants on a sticky note.
3. Have them define the ideal outcome, i.e., the bull's eye.
4. Have them evaluate each solution based upon how close they come to the ideal. Physically place each option on the target relative to how close they come.
5. Have them identify what pulls each solution toward the ideal.
6. Have them explore what pushes each solution away from the idea, and seek to overcome these problems. You may move the solutions on the target to reflect this additional thinking.

Use in: Formulate Solutions

Origin: Unknown.

Notes:



Facilitator Tools

Session Facilitation Tools

The following tools represent tools that might used throughout a CPS session to help with team-building, energizing the group and imaginative ways to break up a group into sub-groups. All of these tools help to give a session forward momentum and keep participants engaged in the process.

TECHNIQUES FOR SETTING THE CLIMATE: STEALTH TOOLS THAT MAKE A HUGE DIFFERENCE

Homework

Pre-session homework jumpstarts incubation, warms-up the group, generates excitement and helps participants make new connections before even starting the session. Example: When developing a new customer service model for a manufacturing firm, the homework included sending clients to a wide variety of venues (luxury hotel, retail store, etc.) to have a customer service experience. They listed the elements of their experience on a worksheet that eventually formed the basis of a forced connections exercise.

Creative Venue

Don't underestimate the power of an interesting venue for holding your sessions. If you can get off-site, do it! Here are some ideas: a nature preserve center, an art museum, a college campus, a culinary school, an art and design school, a hotel, a private room at a restaurant, a unique focus group facility with special rooms, a high school, a cabin in the woods, a country club, the zoo, heck, even a Bison ranch. Most of these venues have private rooms and are accustom to hosting groups. Make sure you check it out before booking and be aware of hidden fees. By hosting your session at one of these venues, you've heightened anticipation and started creativity flowing.

Windows, Windows, Windows

The actual room in which you hold a session contributes greatly to creative thinking. Ideal rooms have plenty of windows, are large enough for teams to move around, feature small tables (forget the over-powering board room style table), chairs on wheels. When setting up the room, think about ways you might energize it – posters, inspirational quotes, fresh flowers, chocolate on the tables, etc. And, remember to check the temperature.

Coffee, Fruit and Chocolate

Great food is the key to great thinking. Splurge when it comes to snacks and meals. Clients walk into the room and see a great spread of goodies and they are ready to go. Ideas: coffee, fruit, yogurt and pastry in the morning, a boxed lunch and cookies in the afternoon. It is amazing what a little sugar can do to boost thinking. Put little candies/chocolates and fresh fruit on the tables. And, plenty of water, creativity is thirsty work.

Music

Music is a sure-fire way to get a group excited. Play something energizing as people first walk in. Use music intermediately throughout your session. Be careful not to overdo it and stay away from lyrics that are suggestive!

Color

Adding color to a CPS session creates visual interest, suggests fun and playfulness and is a welcome difference from the mundane black and white world of text, one of the goals of a creative session. Enhance your CPS sessions with colored pencils and markers, colored Post-it notes, even bright, colorful toys on table tops for the tactile learners in the group.

"To be prepared is half the victory." — MIGUEL DE CERVANTES

Introduction/Icebreaker Games

As a facilitator, part of your role is to take a collection of individuals, who may or may not know each other and turn them into a resource group or team. Introduction Games, or Icebreakers, are a great way to open the session and allow people to feel comfortable with each other and prepare them for the work they're about to do. Use these games as a way of setting a tone of openness in your session and allowing even the people who know each other to work together in a different way.

"For good ideas and true innovation, you need human interaction, conflict, argument, debate." — MARGARET HEFFERNAN

FACILITATION TOOLS

Have You Ever?

Benefit

- Allows a new group of participants to get to know each other and helps group formation prior to beginning the session

Instructions

1. Give participants a sticky note and ask them to form a circle with the you as the facilitator in the middle.
2. Participants are to place the sticky note note in front of their feet – these represent 'designated spaces.'
3. Set up how to play Have You Ever? … all will introduce themselves, state their role, and include any other information that they would like all participants to share.
4. Then ask the group a question beginning with 'Have you ever…' (for example, 'Have you ever eaten sushi?').
5. If participants have ever done what was asked, they have to run and find another spot in the circle.
6. There will always be someone stuck in the middle of the circle; this person introduces themselves next and gets to ask the next question.
7. Repeat until everyone has taken a turn – if you end up in the middle and have already introduced yourself, someone else must pop in and take your place.
8. A few considerations:
   - When finding another spot, tell participants they can't pick a spot on either side of where they are currently standing.
   - Questions can be about anything or must be related to the overall category (for example, 'Snacking').

Use in: Introductions / Icebreakers

Origin: Unknown.

Notes:

FACILITATION TOOLS

My Name Is...

Benefits

- Helps team form rapport and get comfortable working together
- Alternate: Helps energize and warm-up a group before a divergent thinking exercise, producing better results

Instructions

1. Have participants form a circle and join them in it.
2. Explain that you are going to introduce yourselves in a creative way that involves rhythm.
3. Explain that "everyone has rhythm (we hope)" then ask everyone to take one step to their right and then step together.
4. Then everyone will take one step to their left and then step together.
5. Repeat until everyone is stepping right-together, left-together smoothly.
6. Next everyone will add a clap when their feet come together – step-clap, step-clap.
7. Start a rhythmic chant that states their name and something they like to do + a motion or sound that goes with it…'My name is Susan and I like to laugh…HA-HA-HA, HA-HA-HA'.
8. Still moving left to right, everyone in the group will then repeat 'Her name is Susan and she likes to laugh….HA-HA-HA, HA-HA-HA!'
9. Repeat around the circle until everyone has gone.

Use in: Introductions / Icebreakers

Origin: Unknown.

Notes:

FACILITATION TOOLS

Roving Reporter

Benefit

- Quickly engages a group and gets them interacting with each other in an inquisitive manner

Instructions

1. **Set-up:** As participants enter the room, give everyone a clipboard, something to write with and a sheet of paper with a question at the top.
2. Explain that their job is to roam around the room, introducing themselves to other people as they arrive. After they introduce themselves, they need to ask the person the question on their sheet.

   Prompts:

   - You've got 10 min. to flee. After photos, important papers, and survival stuff – what do you take?
   - What did you think you'd be when you grew up?
   - Childhood nickname?
   - Gutsiest thing you've ever done?
   - What makes someone a CPSI-ite?
   - Best advice you've been given?
   - Worst advice you've been given?
   - In a dream world, who would you like to write/act/sing/dance/play like?
   - Have you ever collected anything – what?
   - Who are you a secret groupie for?
   - If you could give someone a piece of your mind, who would it be and what you say?
   - If you had a soapbox for an hour, what would your cause be?
   - Do you have any tattoos?
   - What's your remedy for a tough day?
   - What's in your pockets right now?
   - Who's your creative hero?
   - Name one thing that's over-rated.
   - Name one embarrassing thing you hide when guests are coming over.
   - What do you do every day that I might not expect?

- If you could have a super power, what would it be?
- What was your best vacation?
- What's the top thing on your bucket list?
- What's your favorite dessert?
- Share something you are very proud of doing.
- What's the most interesting form of transportation you've ever taken?
- Who would you like to dress like for a costume party – if you had a costume designer at your disposal?
- Best place you've lived and why?

3. Participants write down the person's name, their answer, and thank them.
4. They continue playing the 'roving reporter' until all their sheets are filled.
5. Bring everyone back to the circle. Go around the room as each person introduces themselves to the group (e.g., name, title, where they're from, what they hope to get out of the week, etc.).
6. Before moving on, ask, "What else do we know about….?" A few people will provide answers that they got from their interviews. Many times they are very insightful and funny!
7. After 3-4 people share, move on to the next person in the group.

Use in: Introductions / Icebreakers

Origin: Unknown.

Notes:

Energizers

A wide variety of Energizers should be in your Facilitator's toolbox used liberally whenever needed. Energizers are just what the name implies; the goal is to do a short activity that lasts for a few minutes that increases the energy level of the group. There are some natural low points in every session that are predictable (i.e., after lunch) and can be scheduled in your session agenda. Tip: It's always good to have a few simple energizers in mind that aren't on the schedule, just in case.

You'll want to make your participants comfortable, but also stretch them before working on the client's problem. Energizers can help people feel comfortable working together while also helping them access the more imaginative part of their mind.

Note: Use your judgment when selecting an energizer for your group taking into account physical limitations and comfort zone of participants.

"Enjoyment is an incredible energizer to the human spirit." — JOHN C. MAXWELL

1-2-3

Benefit

- Helps facilitator assess the comfort zone of the group

Instructions

1. Ask participants to find a partner and face each other. This must be done in pairs, so if you have an odd number, the facilitator participates to make the number even.
2. This is done in four rounds:
   - **Round 1:** Participants count to three by taking turns. Partner A says '1', Partner B says '2,' Partner A says '3', Partner B says '1', etc. Have them repeat the 1-2-3-1-2-3 pattern for a while.
   - **Round 2:**: Participants now count to three by exchanging the '1' for a CLAP. CLAP-2-3-CLAP-2-3, etc. (This should be a bit harder!)
   - **Round 3:** Participants now count to three by using a clap for '1' and a SNAP for '2'. CLAP-SNAP-3-CLAP-SNAP-3, etc. (This will become even more challenging and they will really slow down.)
   - **Round 4:** Participants now count to three by using a CLAP for '1', a 'SNAP' for '2' and a 'STOMP' for '3'. CLAP-SNAP-STOMP-CLAP-SNAP-STOMP, etc.

     Note: People will really slow down by the end, but it's really fun for participants.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Bear-Hunter-Lady

Benefit

- Helps raise the energy level and/or stretch divergent thinking muscles

Instructions

1. Direct participants to get into pairs and line up back to back.
2. On the count of three, they need to turn around and strike the pose of either a hunter, a bear, or a lady. The poses for each are as follows:
   - **Bear** – pretending to attack with paws up.
   - **Hunter** – pretending to shoot a rifle.
   - **Lady** – posing with one hand on hip, one hand behind head.
3. The hunter wins over the bear, the bear wins over the lady, and the lady wins over the hunter (á la rock, paper, scissors).
4. This game should be played as a best of three with the original pairs.
5. Winner of this match will go on to find the winner from another pair.
6. This is played as a single elimination game until there is only one winner left.
7. **Variation:** Pirate-Sailor-Mermaid.

Use in: Energizing the Group

Origin: Unknown.

Notes:

_____

_____

_____

_____

"Creativity requires the courage to let go of certainties." — ERICH FROMM

FACILITATION TOOLS

Big Booty

Benefit

- Energizes the group with a simple call and response format

Instructions

1. Direct participants to form a circle.
2. Ask participants to number off, ending with Facilitator as 'Big Booty.'
3. Explain this exercise has movements and a song: *'Aaaah Big Booty…Aaaah Big Booty… Big Booty-Big Booty-Big Booty.'*
4. This is a call and response game – Big Booty starts by calling own name and a number (Big Booty, Number 3).
5. Then Number 3 calls own name and another number (Number 3, Number 7)
6. Continue around circle (Number 7, Number 9…Number 9, Big Booty).
7. Every time Big Booty is called, everyone sings the song again.
8. When someone messes up, they become Big Booty and everyone's number changes (this gets comlpicated!).

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Clap Focus

Benefit

- Helps group focus again after returning from a break

Instructions

1. Direct participants to form a circle.
2. Explain that one person in the circle should pick a random person in the circle and claps at them (take a half-step into the circle when you clap).
3. The person who was singled out picks another random person and claps at them.
4. The goals is to have the clapping flying back and forth across the circle, until there is a constant clapping noise.
5. **Variation:** Participants form a circle. Facilitator turns to the person on their right and they have to clap at the same time. That person then turns to the person to their right and they have to clap at the same time. Continue around the circle. Once it gets back to the Facilitator, it continues but begins to speed up until the team is working together as a well-oiled machine.

Use in: Energizing the Group

Origin: Unknown.

Notes:

"Enthusiasm is excitement with inspiration, motivation, and a pinch of creativity." —BO BENNETT

FACILITATION TOOLS

Driver's Seat

Benefit

- Helps energize while building trust, which you can use to facilitate team bonding in a group

Instructions

1. Direct participants form into pairs and designate a Partner A and Partner B.
2. Partner A is the Driver; Partner B is the Vehicle.
3. Vehicles have to come up with a horn sound – practice it out loud!
4. Drivers get behind their Vehicles and place their hands on Vehicles' shoulders.
5. Vehicles close their eyes and Drivers navigate them around the room.
6. Every time the Driver comes close to bumping into another Vehicle, they squeeze the shoulders of their own Vehicle – Vehicle sounds their alarm and they keep going.
7. You pass the driver's test if you avoid any collisions!

Use in: Energizing the Group

Origin: Unknown.

Notes:

"An essential aspect of creativity is not being afraid to fail." — EDWIN LAND

FACILITATION TOOLS

Dynamic Duos

Benefit

- Energizes group in a fun, competitive way

Instructions

1. Direct participants to divide into two teams – each team has 1 minute to come up with a team name.
2. Hold a bag full of 'Dynamic Duos' – these are famous pairs or things that go together well.
3. For the first round, each team designates someone who will give clues; the rest of the team gets to guess.
4. Teams each have 2 minutes to guess as many Dynamic Duos as possible.
5. Clue givers can use any words or descriptions, but cannot:
   - Use rhyming words.
   - Say any part of the word or give the first letter of the word.
   - Show the team the paper!
6. If someone from the team answers it, the paper is dropped on the floor and counted as a point.
7. After the end of 2-3 rounds per team, the team with the highest score wins.

Use in: Energizing the Group, Grouping Exercise

Origin: Unknown.

Notes:

FACILITATION TOOLS

Glue

Benefit

- Gets the group physically moving and helps participants to further stretch their divergent muscles

Instructions

1. Direct participants to form into a circle.
2. Call two individuals into the circle.
3. These individuals have to cross the circle and pretend as if there were glue substance in the middle of the circle impacting how they cross.
4. Continue a few times and then change up the substance in the middle to:
   - Jell-O
   - Feathers
   - No gravity
   - Hurricane-strength winds
   - Water up to chin

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Paparazzi

Benefits

- Allows participants to move around and stretch their improvisation muscles
- Gets the group to deepen bonding

Instructions

1. Gather everyone in the center – explain that they are all celebrities and the paparazzi has been in hot pursuit of them.
2. Explain that unfortunately, our celebrities are having a bad hair day and they are trying desperately to dodge the paparazzi – they need their bodyguards!
3. Without pointing or saying any names out loud, participants need to designate someone else in the circle who is their paparazzi and someone who is their bodyguard.
4. Participants start moving around the room – the goal is to keep their bodyguard between themselves and the paparazzi.
5. It's always fun at the end to see if everyone knew who picked them to be their paparazzi and bodyguard.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Recognizing Patterns

Benefit

- Gets group moving again after a break or to increase group bonding

Instructions

1. Setup: Gather 5-6 different items that are somewhat easy to catch (e.g., squishy ball, rubber chicken, large block, etc.).
2. Facilitator grabs 5-6 different items.
3. Participants form a circle and hold their hands out to receive.
4. Facilitator passes one of the items to someone in the circle, and each person passes it on to someone else – once you have caught the item, you put your hands down.
5. The object must be passed to everyone in the circle at least once – no repeating in a single round.
6. Once everyone has received the object, they toss the object again, repeating the same pattern.
7. The object continues to get passed along and Facilitator introduces a new object – again following the same pattern that was established in the beginning.
8. The goal is to get all 5-6 objects passing simultaneously without anyone dropping it.
9. As more objects get introduced, it becomes apparent that participants need to stay focused, look out for anything coming their way, and to let others know when they are getting ready to pass them an object.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Red Ball, Thank You

Benefits

- Helps new groups form effectively and learn each other's names
- Reduces stress of individuals new to each other or facilitated sessions

Instructions

1. Direct participants to form a circle.
2. Facilitator passes an imaginary red ball to someone in the circle by saying *'Sam, Red Ball'* – then Sam must 'catch' the ball and respond by saying *'Red Ball, Thank You.'*
3. Now Sam must pass the ball to someone else – *'Laura, Red Ball,'* and Laura will 'catch' the ball and say *'Red Ball, Thank You.'*
4. Once the Red Ball has been passed several times, Facilitator will pass out a different colored ball.
5. The goal is to get several balls moving in the circle.
6. Game is ended when Facilitator asks everyone who's holding a ball to hold it up for everyone to see.
7. Participants call out which colored ball they have – hopefully; only one ball in each color is called out!

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Song Circle (aka American Idol)

Benefit

- Helps intact teams stretch divergent muscles further

Instructions

1. Instruct the participants to form a circle.
2. Choose a general theme, like 'transportation' or 'love.'
3. Once you've chosen a theme, tell players to jump into the center of the circle and start to sing any song related to the theme.
4. Once a player gets stuck on the song, another player must jump in the center and start a new song.
5. The previous person in the center then steps out.
6. The point is not to embarrass the player in the center, but to support them; other players should jump in quickly when the player in the center starts to have trouble.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Squirrel House

Benefit

- Helps get the group moving again, especially after a lunch or long break

Instructions

1. Direct the participants to form into teams of three.
2. Two participants need to face each other and put their hands up in the air to form a 'house' – the other participant gets inside the house and is the 'Squirrel' (make them act it out to get in the spirit).
3. Facilitator asks everyone who is on the Squirrel's right side to wave – these people are 'right side house.'
4. Facilitator asks everyone who is on the Squirrel's left side to wave – these people are 'left side house.'
5. Facilitator stands in the middle and can call out one of three things: *'Squirrel,' 'Right Side House'* or *'Left Side House.'*
6. Whatever Facilitator calls, those people have to run and find another position – the goal is for the middle person to grab a spot, leaving someone else in the middle.
7. Continue along until people are moving, then add a new choice: Earthquake.
8. When anyone yells *'Earthquake'* everyone must run and find another spot.

Use in: Energizing the Group

Origin: Unknown.

Notes:

_____

_____

_____

_____

"Creativity is the power to connect the seemingly unconnected." — WILLIAM PLOMER

FACILITATION TOOLS

Which Side Are You on?

Benefit

- Helps a new group learn more about each other and become more comfortable working together

Instructions

1. The facilitator should explain that there are two sides of the room.
2. When the facilitator calls out each of two choices, participants must quickly run to either side of the room. Consider clarifying that the first thing called equates to the right hand side of the room.
   - City or country?
   - Beach or mountain?
   - Left-handed or right-handed?
   - Half empty or half full?
   - Yes or no?
   - Healthy food or comfort food?
   - North or south?
   - High-brow or low-brow?
   - Easy-going or high-strung?
   - Country or rock-n-roll?
   - Silly or serious?
3. People always have the choice of staying in the middle.
4. You can select choices that fit the challenge, if appropriate.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Yes, Let's!

Benefit

- Helps people practice deferred judgement with an easy call-response activity

Instructions

1. Direct everyone to walk about the room and listen … when an activity is called out, everyone should respond, *"Yes, Let's,"* and mime that activity until someone else suggests and activity.
2. The facilitator should start and loudly suggests an activity for everyone to mime.
   For example: *"Let's rake leaves."*
3. Everyone should respond, *"Yes, let's"* and start to do the activity.
4. Once the activity has been mimed for a while, anyone can shout out another activity.
5. The cycle continues until someone yells out *"Let's finish this game,"* or *"Let's all sit down."*
6. All should feel free to use sound effects.

Use in: Energizing the Group

Origin: Unknown.

Notes:

FACILITATION TOOLS

Zip-Zap-Zop!

Benefit

- Helps energize a group in fast-paced activity

Instructions

1. Direct participants to form a circle.
2. Explain that there are only 3 words to this game – Zip, Zap or Zop.
3. As the facilitator, you start by making eye contact with someone in the circle – step forward to that person, point and says *'Zip.'*
4. That person then has to make eye contact and move towards someone else saying *'Zap'* – and the next person has to say *'Zop.'*
5. The game must move quickly; only those 3 words in that exact order can be used.
6. Whenever someone messes up, they are removed from the circle.
7. The game continues until there are only 2 people and rapid-fire Zip-Zap-Zopping occurs until someone loses.
8. Hand out prizes for the final contenders.

Use in: Energizing the Group

Origin: Unknown.

Notes:

_____

_____

_____

_____

"We have no hope of solving our problems without harnessing the diversity, the energy, and the creativity of all our people." — ROGER WILKINS

Grouping Games

To accommodate different energy levels and personality styles, great CPS sessions balance large group, small group and individual activities. Each allows individuals with different preferences to share and contribute in a way that they feel most comfortable. For example, an extrovert often enthusiastically shares in large group activities, but an introvert might prefer small group or individual activities.

To divide large groups into smaller ones, say three smaller groups, you could simply have participants count off by threes. Then, after they've done so, you can ask all the ones to work together, all the twos to work together, and all the threes to work together. However in a CPS session, consider breaking large groups into smaller ones in new and innovative ways by stocking your toolbox with the grouping games like the ones on the following pages.

Note: Use your judgment when selecting an grouping game for your participants, taking into account physical limitations and comfort zone of participants.

FACILITATION TOOLS

Animals with Attitudes

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Pass out slips of paper to each individual.
2. On each paper there is an 'animal with attitude,' such as:
   - Excited Elephants
   - Grumpy Gorillas
   - Dancing Dogs
   - Sleepy Snakes
   - Curious Cats
3. Without saying any words, participants must act out the animal on their sheet to find their partners.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

_____

_____

_____

_____

"Controversy is part of the nature of art and creativity." — YOKO ONO

FACILITATION TOOLS

Atom Group

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Direct participants to begin moving quickly around the room like tiny little atoms.
2. Facilitator yells out 'Atom 3' and participants need to form quickly into teams of three (getting very close, like when atoms bond).
3. Facilitator instructs them to move around again and calls out another number – 'Atom 5' and participants form into groups of 5.
4. Continue several times with different groupings and for the last 'Atom group' they will be grouped the way you want them to be.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

FACILITATION TOOLS

Continuum

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Tell participants that this exercise must be done without saying any words.
2. Direct participants to form a single line according to any category of your choosing:
   - Birthday
   - Shoe size
   - Height
   - Hair length
   - How far you traveled to get there
3. Participants must do this without saying any words.
4. Then ask participants to number off into the number of groups you want.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

"Creativity makes a leap, then looks to see where it is." — MASON COOLEY

FACILITATION TOOLS

Genres

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Ask participants to get in the groups according to genres you've selected:
   - Heavy Metal
   - Country
   - Bubblegum Pop
   - Opera
   - Hip-Hop
2. The number of genres depends on how many groups you want to form.
3. If the groups are uneven, ask people to move until they are even.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

FACILITATION TOOLS

Hum Group

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Pass out slips of paper to each individual.
2. On the paper there is a familiar song.
   - Old MacDonald
   - Twinkle, Twinkle Little Star
   - For He's a Jolly Good Fellow
   - Star Spangled Banner
   - Jimmy Crack Corn
3. Without saying any words, participants must hum the melody of the song on their piece of paper and find their partners.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

"Creativity is piercing the mundane to find the marvelous." — BILL MOYERS

FACILITATION TOOLS

Lookalikes

Benefit

- Separates one larger group into smaller ones in a fun and dynamic way

Instructions

1. Ask participants to get into groups based on people who look the most like them.
2. Participants may self-select by:
   - Color of clothing
   - Type of clothing
   - Hair color
   - Height
3. Limit group number to no more than 3-4 individuals.

Use in: Breaking One Group into Many

Origin: Unknown.

Notes:

"Everybody born comes from the Creator trailing wisps of glory. We come from the Creator with creativity. I think that each one of us is born with creativity. — MAYA ANGELOU

RESOURCES

Books and Articles

Amabile, T., Kramer, S. (2011). *The progress principle: Using small wins to ignite joy, engagement, and creativity at work*. Cambridge, MA: Harvard University Press.

Basadur, M. (1995). *The power of innovation*. London, Great Britain: Pitman Publishing.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: HarperCollins.

Davis, G. A. (2004). *Creativity is forever*. Dubuque, IA: Kendall/Hunt Publishing Company.

Eberle, R. (1971). *SCAMPER: Games for imagination development*. Buffalo, NY: DOK Publishers.

Fraley, G. (2008). *Jack's notebook: A business novel about creative problem solving*. Nashville, TN: Thomas Nelson, Inc.

Gordon, W. (1961). *Synectics: The development of creative capacity*. New York, NY: Harper & Brothers Publishers.

Grivas, C., & Puccio, G. J. (2012). *The innovative team: Unleashing creative potential for breakthrough results*. San Francisco, CA: Jossey-Bass.

Hurson, Tim. (2008). *Think Better: The innovators guide to productive thinking*. New York, NY: McGraw-Hill.

Isaakson, A. & Dorval, K. et al. (1994/2000). *Creative approaches to problem solving: A Framework for change*. Kendall Hunt Pub. Co.

Kaner, S., & Lind, L. (1996). *Facilitator's guide to participatory decision-making*. Philadelphia, PA: New Society Publishers.

Michalko, Michael. (2006). *Thinkertoys: A handbook of creative thinking techniques*. Berkeley, CA: Ten Speed Press.

Miller, B., Vehar, J., Firestien, Thurber, S., & Nielsen, D. (2011). *Creativity unbound: An introduction to creative process*. Evanston, Il: FourSight.

Noller, R. B., Parnes, S. J., & Biondi, A. M. (1976). *Creative action book*. New York: Scribners. (out of print, can be found at Butler Library, SUNY Buffalo State)

Osborn, A. F. (1963). *Applied imagination: Principles and procedures of creative problem solving* (3d rev. ed.). New York, NY: Scribner.

Parnes, S. (1967). *Creative behavior guidebook*. New York: Scribner. (out of print, can be found at Butler Library, SUNY Buffalo State)

Parnes, S. (1997). *Optimize the magic of your mind*. Buffalo, NY: Bearly Limited.

Parnes, S. (Ed.). (1992). *Source book for creative problem solving: A fifty year digest of proven innovation processes*. Amherst, MA: Creative Education Foundation Press.

Parnes, S. (1987). *The creative studies project*. In Scott G. Isaksen (Ed.), Frontiers of creativity research: Beyond the basics (pp. 156-188). Buffalo, NY: Bearly Limited.

Parnes, S. (2nd Ed.). (2004). *Visionizing: Innovating your opportunities*. Creative Education Foundation.

Puccio, G., Mance, M., Murdock, M. (2011). *Creative leadership: Skills that drive change*. Thousand Oaks, CA: Sage Publications.

Puccio, G., Mance, M., Switalski, L., Reali, P. (2012). *Creativity rising: Creative thinking and creative problem solving in the 21st century*. Buffalo, NY: ICSC Press.

Websites

Creative Education Foundation
http://www.creativeeducationfoundation.org

The Creative Problem Solving Institute
http://www.cpsiconference.com

The International Center for Studies in Creativity
http://www.buffalostate.edu/centers/creativity

"The big question is whether you are going to be able to say a hearty Yes to your adventure." — JOSEPH CAMPBELL

References

CPS Model. Based on the work of Puccio, G.J., Mance, M., & Murdock, M. C. (2011). *Creative leadership: Skills that drive change* (2nd ed.). Thousand Oaks, CA: California and Miller, B., Vehar, J., Firestien, Thurber, S., & Nielsen, D. (2011). *Creativity unbound: An introduction to creative process.* Evanston, Il: FourSight.

Eberle, R. (1971). *SCAMPER: Games for imagination development.* Buffalo, NY: D. O. K. Publishers.

Ekvall, G. (1996). *Organizational climate for creativity and innovation. European Journal of Work and Organizational Psychology,* 5 (1), pp. 105-123.

Ekvall, G. (1987). *The climate metaphor in organizational theory.* In Bass, Bernard M. Drenth, Pieter J.D. (Eds.), *Advances in Organizational Psychology* (pp. 177-190). Beverly Hills, CA: Sage Publications.

Gordon, W.J.J. (1971). *The basic course in synectics.* Cambridge, MA: Porpoise Books.

Guilford, J.P. (1977). *Way beyond the IQ: Guide to improving intelligence and creativity.* Buffalo, NY: Creative Education Foundation.

Guilford, J.P. (1983) *Transformation abilities or functions. Journal of Creative Behavior,* 17:75-83.

Hurson, Tim. (2008). *Think Better: The innovators guide to productive thinking.* New York, NY: McGraw-Hill.

Isaksen, S., Dorval, B., & Treffinger, D. (2000). *Creative approaches to problem solving: A framework for change (2nd. Ed.)* . Williamsville, NY: Creative Problem Solving Group-Buffalo.

Isaksen, S., & Treffinger, D. (2004). *Celebrating 50 years of reflective practice: Versions of creative problem solving. Journal of Creative Behavior*, 38 (2).

Isaksen, S., & Treffinger, D. (1985). *Creative problem solving: The basic course.* Buffalo, NY: Bearly Limited.

Noller, R. (1977). *Scratching the surface of creative problem solving.* Buffalo, NY: D. O. K. Publishers.

O'Quinn, K., & Besemer, S. (1989). *The development, reliability, and validity of the revised creative product semantic scale. Creativity Research Journal, 2*, pp. 267-278.

Osborn, A.F. (1953/1963). *Applied imagination: Principles and procedures of creative problem-solving.* New York: Scribner. Parnes, S. (2nd Ed.). (2004). *Visionizing: Innovating your opportunities.* Creative Education Foundation.

Parnes, S. (1997). *Optimize the magic of your mind.* Buffalo, NY: Bearly Limited.

Parnes, S. (1987). *The creative studies project.* In Scott G. Isaksen (Ed.), *Frontiers of creativity research: Beyond the basics* (pp. 156-188). Buffalo, NY: Bearly Limited.

Parnes, S. (1967). *Creative behavior guidebook*. New York: Scribner.

Rhodes, M. (1961). *An analysis of creativity. Phi Delta Kappan, 42*, pp. 305-310.

Treffinger, D., Isaksen, S., & Firestien, R. (1983). *Theoretical perspectives on creative learning and its facilitation: An overview. Journal of Creative Behavior, 17* (1), pp. 9-17.

Treffinger, D., Isaksen, S., & Firestien, R. (1982). *Handbook of creative learning (Vol. 1)* . Williamsville, NY: Center for Creative Learning.

Notes

[1] Noller, R. B. Symbolic equation for creative problem solving. Retrieved from http://russellawheeler.com/resources/learning_zone/creativity_formula/

[2] Gabler, N. (2006). *Walt Disney: The triumph of the american imagination* (p 187). Random House.

[3] Parnes, S. & Noller, R. (1972). Applied creativity: The creative studies project. Part II — Results of the two-year program. *The Journal of Creative Behavior,* 6(3), 164-186.

"If we cannot now end our differences, at least we can help make the world safe for diversity." — JOHN F. KENNEDY

Origins of Creative Problem Solving

Alex Osborn, the O in the international advertising agency BBDO, formalized brainstorming in 1939 as a problem-solving tool at BBDO. Brainstorming was the first of many nominal group techniques for generating ideas.

Osborn studied creative people to identify the natural process of how they intuitively create good ideas. With the goal of approaching problems with greater imagination, he incorporated his learnings into the first versions of the CPS process, helping people learn how to be more deliberately creative.

A natural educator, Osborn believed that if people were going to be creative in business, they needed to learn creative thinking skills when they were in school. Osborn's *Applied Imagination*, published in 1953, was the first creativity textbook.

In 1954, Osborn created the Creative Education Foundation, which was sustained by royalties earned from his books. Along with Dr. Sidney Parnes, Osborn developed the "Osborn-Parnes Creative Problem Solving Process" (commonly referred to as CPS). That same year, launched the Creative Problem Solving Institute, the world's longest-running international creativity conference.

In 1967, Dr. Parnes started a pilot program in creativity at Buffalo State and became the founding director of what is now the International Center for Studies in Creativity (ICSC).

Despite the death of Osborn in 1966, Dr. Parnes continued to develop and modify Osborn's original seven stage CPS model. After numerous adaptations the Osborn-Parnes Five Stage CPS model was born. This model's stages were Fact Finding, Problem Finding, Idea Finding, Solution Finding, and Acceptance Finding. The advantage of this model was the depiction of the alternating process known as divergent and convergent thinking. This notion of divergent and convergent thinking occurs in every stage of this model.

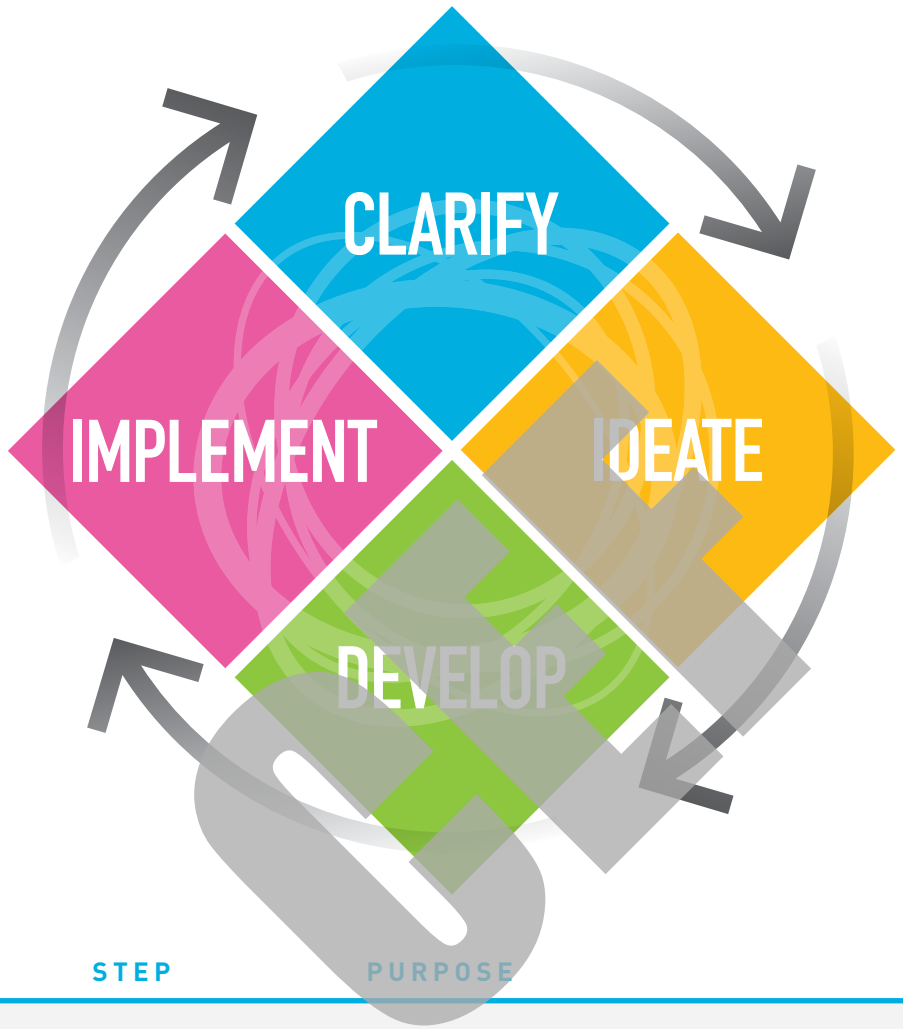
In the early 1970s, Parnes launched the Creative Studies Project with colleague Dr. Ruth Noller. This truly pioneering initiative validated that creative studies content could indeed be taught and learned effectively. This allowed for creativity studies to gain traction and academic support.

Drs. Parnes and Noller continued teaching creative studies and in 1981 Dr. Scott Isaksen joined the faculty to assist in the now formalized Masters of Science degree in Creative Studies. In 1982 Dr. Parnes turned over the directorship of the center to Dr. Isaksen. With many fond memories and a tremendous sense of satisfaction, Dr. Sid Parnes retired in 1984 as a Professor Emeritus from Buffalo State College. Today Dr. Gerard Puccio heads ICSC, which continues to enrich the field with an evolving model and new research.

"The one thing that can solve most of our problems is dancing."— JAMES BROWN

CPS Model

In the most recent iteration of the CPS Model, there are four stages with six explicit steps. Within each stage, each step uses divergent and convergent thinking.



STAGE	STEP	PURPOSE
CLARIFY	Explore the Vision	Identify the goal, wish, or challenge.
	Gather Data	Describe and generate data to enable a clear understanding of the challenge.
	Formulate the Challenge	Sharpen awareness of the challenge and create challenge questions that invite solutions.
IDEATE	Explore Ideas	Generate ideas that answer the challenge questions.
DEVELOP	Formulate Solutions	To move from ideas to solutions. Evaluate, strengthen, and select solutions for best "fit."
IMPLEMENT	Formulate a Plan	Explore acceptance and identify resources and actions that will support implementation of the selected solution(s).

CPS Model based on work of G.J. Puccio, M. Mance, M.C. Murdock, B. Miller, J. Vehar, R. Firestien, S. Thurber, & D. Nielsen (2011).

Creative Education Foundation
46 Watch Hill Drive | Scituate, MA 02066
CreativeEducationFoundation.org 508.960.0000 | 413.658.0046 fax