

Brainstorming

'Brainstorming is to innovation as hand passing is to football'.

Ground rules

There are four basic rules in brainstorming. These are intended to reduce social inhibitions among group members, stimulate idea generation, and increase overall creativity of the group.

- 1 Focus on quantity: This rule is a means of enhancing divergent production, aiming to facilitate problem solving through the maxim quantity breeds quality. The assumption is that the greater the number of ideas generated, the greater the chance of producing a radical and effective solution.
- 2 Withhold criticism: In brainstorming, criticism of ideas generated should be put 'on hold'. Instead, participants should focus on extending or adding to ideas, reserving criticism for a later 'critical stage' of the process. By suspending judgment, participants will feel free to generate unusual ideas.
- 3 Welcome unusual ideas: To get a good and long list of ideas, unusual ideas are welcomed. They can be generated by looking from new perspectives and suspending assumptions. These new ways of thinking may provide better solutions.
- 4 Combine and improve ideas: Good ideas may be combined to form a single better good idea, as suggested by the slogan '1+1=3'. It is believed to stimulate the building of ideas by a process of association.

Set the problem

Before a brainstorming session, it is critical to define the problem.

The problem must be clear, not too big, and captured in a specific question such as "What service for mobile phones is not available now, but needed?". If the problem is too big, the facilitator should break it into smaller components, each with its own question.

Create a list of lead questions

During the brainstorm session the creativity may decrease. At this moment, the facilitator should stimulate creativity by suggesting a lead question to answer, such as "Can we combine these ideas?" or "How about looking from another perspective?". It is best to prepare a list of such leads before the session begins.

See 'Some lead questions' and 'Blocking and block busting' below

Session conduct

The facilitator leads the brainstorming session and ensures that ground rules are followed.

The steps in a typical session are:

- 1 Optional – conduct a warm-up session using a ‘throw-away problem’ that is, how to pump up a tyre without a pump or how to get chewing gum off the bottom of your shoe etcetera.
- 2 The facilitator presents the problem and gives a further explanation if needed.
- 3 The facilitator asks the brainstorming group for their ideas.
- 4 If no ideas are forthcoming, the facilitator suggests a lead to encourage creativity.
- 5 All participants present their ideas, and the idea collector records them.

Some lead questions

Osborn's Questions

- 1 **Put to other uses?** New ways to use as is? Other uses if modified?
- 2 **Adapt?** What else is like this? What other idea does this suggest? Does past offer parallel? What could I copy? Whom could I emulate?
- 3 **Modify?** New twist? Change meaning, colour, motion, sound, odour, form, shape? Other changes?
- 4 **Magnify?** What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?
- 5 **Minify?** What to subtract? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?
- 6 **Substitute?** Who else instead? What else instead? Other ingredient? Other material? Other process? Other power? Other place? Other approach? Other tone of voice?
- 7 **Rearrange?** Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?
- 8 **Reverse?** Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse roles?
- 9 **Combine?** How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?

The 'Journalistic Six'

These are the six key questions that journalism students are taught to answer somewhere in their news articles to make sure that they have covered the whole story. For creative thinkers, these questions stimulate thinking about the idea in question and allow approaches to it from various angles.

- 1 **Who?** (Actor or Agent) Who is involved? What are the people aspects of the problem? Who did it, will do it? Who uses it, wants it? Who will benefit, will be injured, will be included, will be excluded?
- 2 **What?** (Act) What should happen? What is it? What was done, ought to be done, was not done? What will be done if 'X' happens? What went or could go wrong? What resulted in success?
- 3 **When?** (Time or Timing) When will, did, should this occur or be performed? Can it be hurried or delayed? Is a sooner or later time preferable? What should the time be if 'X' happens?
- 4 **Where?** (Scene or Source) Where did, will, should this occur or be performed? Where else is a possibility? Where else did the same thing happen, should the same thing happen? Are other places affected, endangered, protected, aided by this location? Effect of this location on actors, actions?
- 5 **Why?** (Purpose) Why was or is this done, avoided, permitted? Why should it be done, avoided, permitted? Why did or should actor do it? Different for another actor, act, time, place? Why that particular action, rule, idea, solution, problem, disaster, and not another? Why that actor, time, location, and not another?
- 6 **How?** (Agency or Method) How was it, could it be, should it be done, prevented, destroyed, made, improved, altered? How can it be described, understood? How did beginning lead to conclusion?

Blocking and block busting

Many people complain of not being creative when in fact their creativity has merely been blocked.

Sources of blocking

- 1 **Functional fixation:** Functional fixation arises when someone is unable to see beyond the historical or accepted use for an item, often identified by its name or label. Thus, for example, a screwdriver is a tool for **tightening** or loosening screws, just as its name says. A person suffering from functional fixation would be unable to see any other uses for the item. But, of course, a screwdriver can also be used as a paint can opener, an ice pick, a plumb bob, a paper weight, and so on.

- 2 **Adequacy blocking:** A second major inhibitor of creativity is the problem of adequacy. When something works, it is good enough. Edward de Bono, in his book *Lateral Thinking* wrote, “Adequate is always good enough. It is interesting that in our thinking we have developed methods for dealing with things that are wrong but no methods for dealing with things that are right. When something is wrong we explore further. When something is right our thinking comes to a halt. That is why we need lateral thinking [his term for a form of creativity] to break through this adequacy block and restructure patterns even when there is no need to do so.”

Block busting techniques

- 1 **Uses for:** This is a simple technique that can be used for mental stimulation or practical application. It is an excellent tool for breaking you out of a functionally fixated mindset. Choose an item and think of at least 25 original uses for it. (That is, you cannot list things that the item is already used for.) The uses can be fanciful, but should at least approach practicality. Describe each use in a sentence or two.
- 2 **Improvements to:** ‘Improvements to’ is the counterpart of ‘uses for’ Whereas ‘uses for’ concentrates on using a given item, often unchanged, for multiple purposes different from the item’s original purpose, the ‘improvements to’ technique focuses on altering an item to enhance its original, given purpose. The item in question can be any of several kinds and is not limited to objects.

An idea list of ways to improve something

- Simplify – remove complexity
- Apply to new/use
- Automate
- Reduce cost
- Make easier to use, understand
- Reduce fear to own/use
- Make safer
- Give more performance/capacity
- Make faster, less waiting
- Provide more durability/reliability
- Give better appearance
- Create more acceptance by others
- Add features, functions
- Integrate functions
- Make more flexible/versatile
- Make lighter weight – or heavier
- Make smaller – or larger
- Make more powerful

- Reduce or eliminate drawbacks, bad side effects
- Make more elegant
- Give better shape, design, style
- Provide better sensory appeal (taste, feel, look, smell, sound)
- Provide better psychological appeal (understandable, acceptable)
- Provide better emotional appeal (happy, warm, satisfying, enjoyable, fun, likeable, neat)
- Aim toward ideal rather than immediate goals
- Give larger capacity
- Make portable
- Make self-cleaning, easy to clean
- Make more accurate
- Make quieter.

Note: Remember that some of the major problems in modern living are too much noise, too much information, too many decisions, too much complexity, together with a general lack of quality and reliability. Intelligent addressing of these problems in connection with your idea should produce welcome improvements to it.

- 3 **What-iffing:** A major block to creativity for many of us is the mind's fierce grasp on reality. This very factor that keeps us sane also keeps us from thinking beyond what we know to be true. What-iffing is a tool for releasing the mind, for delivering us from being blocked by reality.

In its simplest form, what-iffing involves describing an imagined action or solution and then examining the probable associated facts, consequences, or events. Instead of quickly saying, "That sounds dumb" or "That would never work" and leaving our criticism vague, we trace as exactly as our reasonable minds can generate the specific implications or consequences of the newly imagined fact.

We ought to ask, "What if we do nothing about the problem?" then seek as accurately as possible the consequences.

On another level, what-iffing allows us to create a completely new reality, to establish a new chain of being or relationships, to change the unchangeable in hope of generating a new perspective on a problem or a new idea.

In practical terms, thinking about what does not exist is about the only way we have of eventually making it exist. In other words, the first step to implementing a new reality is to imagine it.

- 4 **Attribute analysis:** Attribute analysis is the process of breaking down a problem, idea, or thing into attributes or component parts and then thinking about the attributes rather than the thing itself.

Attributes can be:

Physical: colour, weight, material, speed, odour, size, structure, taste

Psychological: appearance, symbolism, emotive (“happy smell of detergent”)

Functional: intended uses, applications, how it does what it does

People: who’s involved

Miscellaneous: cost, reputation, origin, class it belongs to, definition

Attribute analysis breaks our fixed and frozen collection of thoughts about a problem or idea. Notice that this is accomplished by refocusing onto something belonging to the problem but more general or abstract or more specific and concrete. Often, attribute analysis is another way of recognising that a given problem is really a collection of interrelated smaller problems. And often it is a way of perceiving the variables that make up a situation or thing in a way that allows us to change one or more and improve the whole thing.

- 5 **Morphological analysis:** Morphological analysis builds upon attribute analysis by generating alternatives for each attribute, thereby producing new possibilities.

The rules are simple:

- A List the attributes of the problem, object, or situation as you would in a standard attribute analysis.
- B Under each attribute, list all the alternatives you can think of.
- C Choose an alternative from each column at random and assemble the choices into a possibility for a new idea. Repeat the choosing and assembly many times.

Example problem: Improve a textbook

List current attributes first.

size/shape	binding	cover	pages	type	pictures
small	sewn	hardback	dull	Roman	photos
large	ring	paper (soft)	fold-out	varied	drawings
rectangular	spiral	plastic	glossy	colour	colour
rounded	left	none	thick	highlighted	holograms
micro	top	metal	flimsy	vertical	draw own

- 6 **Reversal:** The **reversal** method for examining a problem or generating new ideas takes a situation as it is and turns it around, inside out, backwards, or upside down. A given situation can be ‘reversed’ in several ways; there is no one formulaic way.

For example, the situation 'a teacher instructing students' could be reversed as:

- students instructing the teacher
- the teacher misinforming students
- students instructing themselves
- students instructing each other
- teacher instructing himself
- students misinforming the teacher.

Note: This is often called lateral thinking.

Example: A chain store was being hurt by the competition. Some possible reversals include how can the:

- store hurt the competition?
- competition help the store?
- competition hurt itself?
- store help itself?

The second reversal, "How can competition help the store?" was chosen and was implemented by sending employees to competing stores every week to examine displays, sales, floor plans, goods quality and selection, anything that appeared to be effective or useful. The employees brought these ideas back to company, compared and implemented the best in the store.

Result: Competition helped the store.

Looking at a familiar problem or situation in a fresh way can suggest new solutions or approaches. It doesn't matter whether the reversal makes sense or not