

## SCAMPER

A structured way to develop solutions

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## A structured way to develop solutions

<b>S</b> ubstitute	Can people, components, materials or processes be replaced by others?
<b>C</b> ombine	Are there any subprocesses that can be combined?
<b>A</b> dapt	Can other process ideas be adapted or changed to the process being investigated?
<b>M</b> odify	Can the process investigated be modified?
<b>P</b> ut to Another Use	Can the current process and current solutions be generalized?
<b>E</b> liminate	The processes and subprocesses investigated can be simplified
<b>R</b> everse	Can simple subprocess order reversal be adequate?



GM is working to reduce our dependence on petroleum



# Substitute

Think about replacing part of the problem, product or process with something else. By looking for replacements you can often come up with new ideas. You can change things, places, procedures, people, ideas, and even emotions.

## Helper Questions

- Can I replace or change any parts?
- Can I replace someone involved?
- Can the rules be changed?
- Can I use other ingredients or materials?
- Can I use other processes or procedures?
- Can I change its shape?
- Can I change its color, roughness, sound or smell?
- What if I change its name?
- Can I substitute one part for another?
- Can I use this idea in a different place?
- Can I change my feelings or attitude towards it?

## Trigger Words

alternate, colorize, exchange, fill in for, locum, proxy, relieve, rename, repackage, replace, reposition, reserve, shape, stand in for, surrogate, swap, switch, take the place of



## Highgear Axis Watch

This all-weather watch is equipped with an **altimeter**, **barometer** and **compass**. The altimeter can store up to **20 checkpoints** with time and date to track accumulated altitude



## Combine

Think about combining two or more parts of your problem to create a different product or process or to enhance their synergy. A great deal of creative thinking involves combining previously unrelated ideas, goods, or services to create something new.

### Helper Questions

- What ideas or parts can be combined?
- Can I combine or recombine its parts' purposes?
- Can I combine or merge it with other objects?
- What can be combined to maximize the number of uses?
- What materials could be combined?
- Can I combine different talents to improve it?

### Trigger Words

amalgamate, become one, blend, bring together, coalesce, come together, commingle, conjoin, fuse, intermix, join, link, merge, mingle, mix, package, relate, unite

Adjust



- Power, innovation, performance
- Very compact and lightweight, these laptops are designed for frequent travelers

# Adapt

Think about adapting an existing idea to solve your problem. The solution of your problem is probably out there already. Bear in mind that all new ideas or inventions are borrowed to some degree.

## Helper Questions

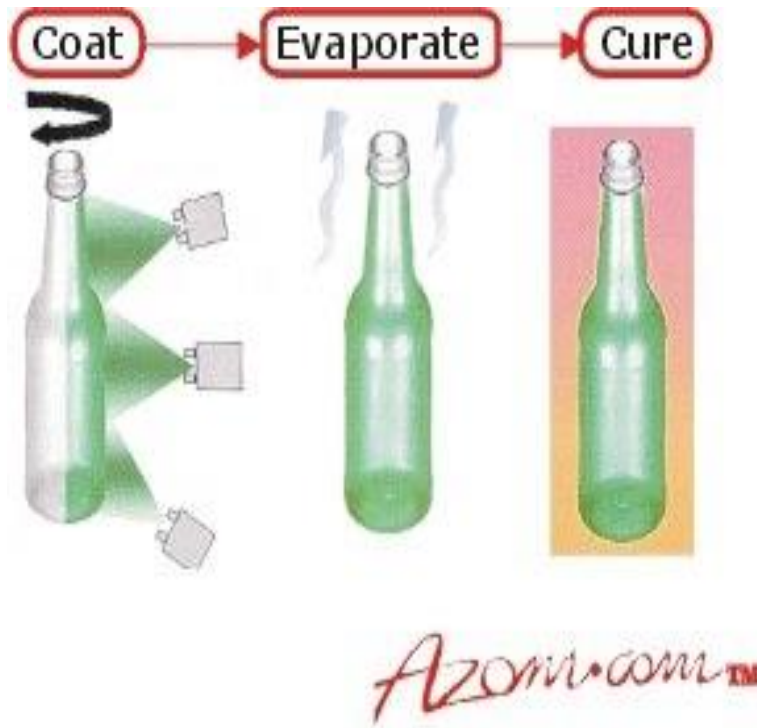
- What else is like it?
- Is there something similar to it, but in a different context?
- Does the past offer any lessons with similar ideas?
- What other ideas does it suggest?
- What could I copy, borrow or steal?
- Whom could I emulate?
- What ideas could I incorporate?
- What processes can be adapted?
- What different contexts can I put my concept in?
- What ideas outside my field can I incorporate?

## Trigger Words

acclimatize, adapt oneself, adapt, adjust, alter, amend, become accustomed, bend, change, conform, contextualize, copy, emulate, familiarize, find your feet, fit, get a feel for, get used to, incorporate, make suitable, match, modify, readjust, refashion, revise, rework, settle in, transform, vary



Minify / Magnify



## Plastic Beer Bottles

- **Bottles are typically one seventh the weight of an equivalent glass container, do not break or smash, and are already well established for carbonated soft drinks**



# Magnify

Think about ways to magnify or exaggerate your idea. Magnifying your idea or parts of it may increase its perceived value or give you new insights about what components are most important.

## Helper Questions

- What can be magnified or made larger?
- What can be exaggerated or overstated?
- What can be made higher, bigger or stronger?
- Can I increase its frequency?
- What can be duplicated? Can I make multiple copies?
- Can I add extra features or somehow add extra value?

## Trigger Words

amplify, augment, boost, enlarge, expand, extend, grow, heighten, increase, intensify, lengthen, make seem more important, multiply, overemphasize, overstress, raise, strenghten, stretch out

# Put to Another Use

Can the current process and current solutions be generalized?



## Put to Other Uses

Think of how you might be able to put your current idea to other uses, or think of what you could reuse from somewhere else in order to solve your own problem. Many times, an idea only becomes great when applied differently than first imagined.

### Helper Questions

- What else can it be used for?
- Can it be used by people other than those it was originally intended for?
- How would a child use it? An older person?
- How would people with different disabilities use it?
- Are there new ways to use it in its current shape or form?
- Are there other possible uses if it's modified?
- If I knew nothing about it, would I figure out the purpose of this idea?
- Can I use this idea in other markets or industries?

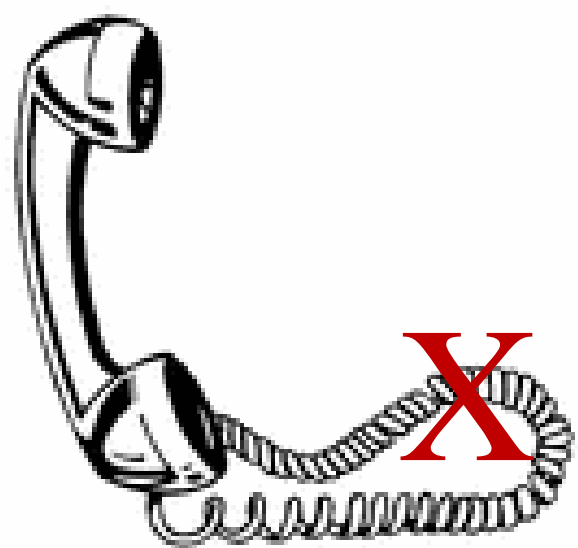
### Trigger Words

abuse, apply, avail yourself of, behave, benefit, bring into play, contextualize, deplete, draw on, consume, employ, enjoy, exercise, exhaust, expend, exploit, get through, handle, luxuriate, make use of, manage, manipulate, mistreat, operate, reposition, source, spend, take advantage of, take pleasure in, tap, treat, use up, utilize, waste, wear out, work

# Eliminate

Elaborate

The processes and subprocesses investigated can be simplified





## Eliminate (or Minify)

Think of what might happen if you eliminated or minimized parts of your idea. Simplify, reduce or eliminate components. Through repeated trimming of ideas, objects, and processes, you can gradually narrow your challenge down to that part or function that is most important.

### Helper Questions

- How can I simplify it?
- What parts can be removed without altering its function?
- What's non-essential or unnecessary?
- Can the rules be eliminated?
- What if I made it smaller?
- What feature can I understate or omit?
- Should I split it into different parts?
- Can I compact or make it smaller?

### Trigger Words

abolish, control, curb, destroy, disregard, do away with, eradicate, exclude, excrete, expel, exterminate, get rid of, jettison, kill, lessen, limit, liquidate, lower, moderate, modulate, pass, play down, purge, reduce, reject, remove, restraint, restrict, shorten, simplify, temper, throw out, tone down, underemphasize, waste, wipe out

Rearrange



## Rearrange (or Reverse)

Think of what you would do if part of your problem, product or process worked in reverse or were done in a different order.

### Helper Questions

- What other arrangement might be better?
- Can I interchange components?
- Are there other patterns, layouts or sequences I can use?
- Can I transpose cause and effect?
- Can I change pace or change the schedule of delivery?
- Can I transpose positives and negatives?
- Should I turn it around? Up instead of down? Down instead of up?
- What if I consider it backwards?
- What if I try doing the exact opposite of what I originally intended?

### Trigger Words

adjourn, annul, back up, change the date, change, delay, drive backward, go backward, invalidate, invert, move backward, move, overturn, postpone, put off, quash, readjust, rearrange, relocate, render null and void, reorder, reorganize, repeal, reposition, reschedule, reshuffle, retreat, swap, switch, transpose, turn around, undo, withdraw



## Example

I want to invent a new type of pen.

Substitute - ink with iron, nib with knife

Combine - writing with cutting, holding with opening

Adapt - pen top as container

Modify - body to be flexible

Put to other uses - use to write on wood

Eliminate - clip by using velcro

Rearrange - nib to fold outwards