# [Einstein’s Secret to Amazing Problem Solving (and 10 Specific Ways You Can Use It)](http://litemind.com/problem-definition/%22%20%5Co%20%22Permanent%20Link%20to%20%5C%22Einstein%E2%80%99s%20Secret%20to%20Amazing%20Problem%20Solving%20%28and%2010%20Specific%20Ways%20You%20Can%20Use%20It%29%5C%22)

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Einstein is quoted as having said that if he had one hour to save the world he would spend fifty-five minutes defining the problem and only five minutes finding the solution.

This quote does illustrate an important point: before jumping right into solving a problem, we should step back and invest time and effort to improve our understanding of it. Here are 10 strategies you can use to see problems from many different perspectives and master what is the most important step in problem solving: **clearly defining the problem in the first place!**

## The Problem Is To Know What the Problem Is

**The definition of the problem will be the focal point of all your problem-solving efforts**. As such, it makes sense to devote as much attention and dedication to problem definition as possible. What usually happens is that as soon as we have a problem to work on we’re so eager to get to solutions that we neglect spending any time refining it.

What most of us don’t realize — and what supposedly Einstein might have been alluding to — is that **the quality of the solutions we come up with will be in direct proportion to the quality of the description of the problem we’re trying to solve**. Not only will your solutions be more abundant and of higher quality, but they’ll be achieved much, much more easily. Most importantly, you’ll have the confidence to be tackling a worthwhile problem.

## Problem Definition Tools and Strategies

The good news is that getting different perspectives and angles in order to clearly define a problem is a **skill that can be learned and developed**. As such, there are many strategies you can use to perfect it. Here are the 10 most effective ones I know.

### 1. Rephrase the Problem

When a Toyota executive asked employees to brainstorm “ways to increase their productivity”, all he got back were blank stares. When he rephrased his request as “ways to make their jobs easier”, he could barely keep up with the amount of suggestions.

Words carry strong implicit meaning and, as such, play a major role in how we perceive a problem. In the example above, ‘be productive’ might seem like a sacrifice you’re doing for the company, while ‘make your job easier’ may be more like something you’re doing for your own benefit, but from which the company also benefits. In the end, the problem is still the same, but the feelings — and the points of view — associated with each of them are vastly different.

Play freely with the problem statement, rewording it several times. For a methodic approach, take single words and substitute variations. ‘Increase sales’? Try replacing ‘increase’ with ‘attract’, ‘develop’, ‘extend’, ‘repeat’ and see how your perception of the problem changes. A rich vocabulary plays an important role here, so you may want to use a thesaurus or [develop your vocabulary](http://litemind.com/10-strategies-improve-vocabulary/).

### 2. Expose and Challenge Assumptions

Every problem — no matter how apparently simple it may be — comes with a long list of assumptions attached. Many of these assumptions may be inaccurate and could make your problem statement inadequate or even misguided.

The first step to get rid of bad assumptions is to make them explicit. Write a list and expose as many assumptions as you can — especially those that may seem the most obvious and ‘untouchable’.

That, in itself, brings more clarity to the problem at hand. But go further and test each assumption for validity: think in ways that they might not be valid and their consequences. What you will find may surprise you: that many of those bad assumptions are self-imposed — with just a bit of scrutiny you are able to safely drop them.

For example, suppose you’re about to enter the restaurant business. One of your assumptions might be ‘restaurants have a menu’. While such an assumption may seem true at first, try challenging it and maybe you’ll find some very interesting business models (such as one restaurant in which customers bring dish ideas for the chef to cook, for example).

### 3. Chunk Up

Each problem is a small piece of a greater problem. In the same way that you can explore a problem laterally — such as by playing with words or challenging assumptions — you can also explore it at different “altitudes”.

If you feel you’re overwhelmed with details or looking at a problem too narrowly, look at it from a more general perspective. In order to make your problem more general, ask questions such as: “What’s this a part of?”, “What’s this an example of?” or “What’s the intention behind this?”.

For a detailed explanation of how this principle works, check the article [*Boost Your Brainstorm Effectiveness with the Why Habit*](http://litemind.com/boost-brainstorm-effectiveness-why-habit/).

Another approach that helps a lot in getting a more general view of a problem is replacing words in the problem statement with [*hypernyms*](http://en.wikipedia.org/wiki/Hypernym). Hypernyms are words that have a broader meaning than the given word. (For example, a hypernym of ‘car’ is ‘vehicle’). A great, free tool for finding hypernyms for a given word is [WordNet](http://wordnet.princeton.edu/perl/webwn) (just search for a word and click on the ‘S:’ label before the word definitions).

### 4. Chunk Down

If each problem is part of a greater problem, it also means that each problem is composed of many smaller problems. It turns out that decomposing a problem in many smaller problems — each of them more specific than the original — can also provide greater insights about it.

‘Chunking the problem down’ (making it more specific) is especially useful if you find the problem overwhelming or daunting.

Some of the typical questions you can ask to make a problem more specific are: “What are parts of this?” or “What are examples of this?”.

Just as in ‘chunking up’, word substitution can also come to great use here. The class of words that are useful here are [*hyponyms*](http://en.wikipedia.org/wiki/Hypernym): words that are stricter in meaning than the given one. (E.g. two hyponyms of ‘car’ are ‘minivan’ and ‘limousine’). [WordNet](http://wordnet.princeton.edu/perl/webwn) can also help you finding hyponyms.

### 5. Find Multiple Perspectives

Before rushing to solve a problem, always make sure you look at it from different perspectives. Looking at it with different eyes is a great way to have instant insight on new, overlooked directions.

For example, if you own a business and are trying to ‘increase sales’, try to view this problem from the point of view of, say, a customer. For example, from the customer’s viewpoint, this may be a matter of adding features to your product that one would be willing to pay more for.

Rewrite your problem statement many times, each time using one of these different perspectives. How would your competition see this problem? Your employees? Your mom?

Also, imagine how people in various roles would frame the problem. How would a politician see it? A college professor? A nun? Try to find the differences and similarities on how the different roles would deal with your problem.

### 6. Use Effective Language Constructs

There isn’t a one-size-fits-all formula for properly crafting the perfect problem statement, but there are some language constructs that always help making it more effective:

* **Assume a myriad of solutions.** An excellent way to start a problem statement is: “In what ways might I…”. This expression is much superior to “How can I…” as it hints that there’s a multitude of solutions, and not just one — or maybe none. As simple as this sounds, the feeling of expectancy helps your brain find solutions.
* **Make it positive**. Negative sentences require a lot more cognitive power to process and may slow you down — or even derail your train of thought. Positive statements also help you find the real goal behind the problem and, as such, are much more motivating.
For example: instead of finding ways to ‘quit smoking’, you may find that ‘increase your energy’, ‘live longer’ and others are much more worthwhile goals.
* **Frame your problem in the form of a question.** Our brain loves questions. If the question is powerful and engaging, our brains will do everything within their reach to answer it. We just can’t help it: Our brains will start working on the problem immediately and keep working in the background, even when we’re not aware of it.
* **If you’re still stuck, consider using the following formula for phrasing your problem statement**:
“In what ways (**action**) (**object**) (**qualifier**) (**end result**)?”
Example: In what ways might I **package** (action) **my book** (object) **more attractively** (qualifier) so **people will buy more of it** (end result)?

### 7. Make It Engaging

In addition to using effective language constructs, it’s important to come up with a problem statement that truly excites you so you’re in the best frame of mind for creatively tackling the problem. If the problem looks too dull for you, invest the time adding vigor to it while still keeping it genuine. Make it enticing. Your brain will thank (and reward) you later.

One thing is to ‘increase sales’ (boring), another one is ‘wow your customers’. One thing is ‘to create a personal development blog’, another completely different is to ‘empower readers to live fully’.

### 8. Reverse the Problem

One trick that usually helps when you’re stuck with a problem is turning it on its head.

If you want to win, find out what would make you lose. If you are struggling finding ways to ‘increase sales’, find ways to decrease them instead. Then, all you need to do is reverse your answers. ‘Make more sales calls’ may seem an evident way of increasing sales, but sometimes we only see these ‘obvious’ answers when we look at the problem from an opposite direction.

This seemingly convoluted method may not seem intuitive at first, but turning a problem on its head can uncover rather obvious solutions to the original problem.

### 9. Gather Facts

Investigate causes and circumstances of the problem. Probe details about it — such as its origins and causes. Especially if you have a problem that’s too vague, investigating facts is usually more productive than trying to solve it right away.

If, for example, the problem stated by your spouse is “You never listen to me”, the solution is not obvious. However, if the statement is “You don’t make enough eye contact when I’m talking to you,” then the solution is obvious and you can skip brainstorming altogether. (You’ll still need to work on the implementation, though!)

Ask yourself questions about the problem. What is not known about it? Can you draw a diagram of the problem? What are the problem boundaries? Be curious. Ask questions and gather facts. It is said that a well-defined problem is halfway to being solved: I would add that a perfectly-defined problem is not a problem anymore.

### 10. Problem-Solve Your Problem Statement

I know I risk getting into an infinite loop here, but as you may have noticed, getting the right perspective of a problem is, well, a problem in itself. As such, feel free to use any creative thinking technique you know to help. There are plenty to choose from:

You may want to give yourself an [Idea Quota](http://litemind.com/get-mentally-fit-with-an-idea-quota/) of problem statements. Or write a [List of 100](http://litemind.com/tackle-any-issue-with-a-list-of-100/) problems to solve. [SCAMPER](http://litemind.com/scamper/) your problem definition. These are just some of dozen techniques you can try.

Of course, how much effort you invest in **defining the problem** in contrast to how much effort you invest in **solving your actual problem** is a hard balance to achieve, though one which is attainable with practice.

Personally, I don’t think that 55 minutes of defining a problem versus 5 minutes acting on it is usually a good proportion. The point is that we must be aware of how important problem defining is and correct our tendency to spend too little time on it.

In fact, when you start paying more attention to how you define your problems, you’ll probably find that it is usually much harder than solving them. But you’ll also find that the payoff is well worth the effort.

**References:**

* Einstein’s Portrait: [Yousuf Karsh](http://en.wikipedia.org/wiki/Yousuf_Karsh).
* Einstein’s Quote: [Cracking Creativity](http://www.amazon.com/exec/obidos/ASIN/1580083110/phaedrus0b).

# [Tackle Any Issue With a List of 100](http://litemind.com/tackle-any-issue-with-a-list-of-100/)

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The List of 100 is a powerful technique you can use to generate ideas, clarify your thoughts, uncover hidden problems or get solutions to any specific questions you’re interested in.

The technique is very simple in principle: state your issue or question in the top of a blank sheet of paper and come up with a list of **one hundred answers or solutions about it**. “100 Ways to Generate Income”, “100 Ways to be More Creative” or “100 Ways to Improve my Relationships” are some examples.

“***One hundred entries***? Isn’t that way too many?”

Bear with me: it’s exactly this exaggeration that makes the technique powerful.

When starting your list you may believe that there’s no way to get it done. But then, at some point during the exercise, you will naturally have your subconscious mind naturally engaged in the process. That’s when you will uncover many new and surprising answers, and ideas will start flowing again. Making a List of 100 is a beautifully articulated cooperation between the conscious and subconscious minds tackling one single problem.

Unlike the related [Idea Quota](http://litemind.com/get-mentally-fit-with-an-idea-quota/) tool — whose primary goal is to acquire the habit of coming up with ideas — the goal of a List of 100 is to take your mind by surprise. While both techniques are based on the concept of [getting good ideas from lots of ideas](http://litemind.com/6-tips-generate-outstanding-ideas/), the ideas generated by each method are usually different in kind. With the [Idea Quota](http://litemind.com/get-mentally-fit-with-an-idea-quota/) you tend to have more elaborate ideas, because you have time to incubate them throughout the day (often without being aware of it). With a List of 100 you tend to get more unexpected ideas, because you catch your subconscious off guard, not giving it any time for its behind-the-scenes editing.

## Ground Rules

There are only two simple principles to keep in mind when making Lists of 100:

### 1. Do it at one sitting

This is the **one crucial element for the technique to work**. If you end up doing your hundred entries, though over many sessions, you’ll defeat the point of the technique. Before starting your list, make yourself comfortable and try to block all potential interruptions.

### 2. Eliminate distractions

Just like most brainstorming techniques, you should strive to **eliminate all activities unrelated to idea generation** during the brainstorming session. Just focus on getting the ideas out of your head as quickly as possible following these rules:

* Don’t judge or evaluate ideas; you’ll review them later.
* Don’t write complete words or sentences if that slows you down.
* Don’t stop to wonder how far in the list you are; number the lines from 1 to 100 in advance or use numbered lists if you’re using a word processor.
* Don’t worry too much about repeating entries; duplicates can shed light on your patterns of thought.

## The Dynamics of Making Lists of 100

To understand why creating a List of 100 works, consider what happens during the process of making one. There are three distinct phases you will usually go through when making your list:

### 1. First 30 entries or so: where you escape circular thinking

The first items are the easiest to come up with. In this first phase, your conscious mind is still in charge and you’ll most probably just dump ideas you’re already familiar with.

### 2. Next 40 entries: where patterns emerge

In this phase you’ll start noticing recurring themes and patterns of thought. Phase two is usually the hardest one, as you may find it difficult to let go of the ideas you had in the first phase in order to come up with new, distinct ones.

Bear in mind that it’s exactly this struggle that enables you to get to the third and most fruitful phase, hence the importance of not giving up at this point.

### 3. Last 30 entries: where the gems are

At this point you will already have exhausted most “logical” answers, allowing your subconscious mind to express itself more freely. Don’t be surprised if you get at least one or two really nonsensical or seemingly illogical entries. You may feel tempted to not write them down (”How on earth did I think that?”). Write them down anyway: these wacky entries may sound far from profound, but it’s exactly those items you’re after.

Also, after coming up with so many entries, it’s not rare to experience a shift in perspective: items that you first felt as being awkward will seem to better fit now than when you started the list. Moreover, your whole attitude towards the problem can change as you develop your entries: you may even come to the conclusion that you should be dealing with a different list topic altogether.

## Applications of Lists of 100

Although I have known a variation of the List of 100 technique for several years (thanks to Michael Gelb’s [How to Think Like Leonardo da Vinci](http://www.amazon.com/exec/obidos/ASIN/0440508274/phaedrus0b)), it was only recently that I realized the technique’s full potential by reading Kathleen Adams’s [Journal to the Self: 22 Paths to Personal Growth](http://www.amazon.com/exec/obidos/ASIN/0446390380/phaedrus0b). This is an excellent book that has many great journaling techniques — and the List of 100 has its own chapter.



The List of 100 technique can be used for a lot more than solving specific problems; it is a general-purpose personal development tool that can help increase your self-knowledge, motivate yourself, and much more. To illustrate its myriad of uses, find below a **List of 100 Lists of 100**. The list was mostly taken from [Journal to the Self](http://www.amazon.com/exec/obidos/ASIN/0446390380/phaedrus0b), and slightly adapted with some of my own ideas.

### 100 Things to Write a List of 100 About

1. 100 Things I’m Grateful For
2. 100 Ways I Could Nurture Myself
3. 100 Ways I Sabotage Myself
4. 100 Things I’m Good At
5. 100 Things I Like About Myself
6. 100 Questions I Want Answers
7. 100 Ways To Improve My Life
8. 100 Things I’ve Accomplished In My Life
9. 100 Things I’m Feeling Stressed About
10. 100 Things I’d Do If I Had Time
11. 100 Things I Need Or Want To Do
12. 100 Things I Want To Accomplish In The Next X Months
13. 100 Things To Do Before I Die
14. 100 Things That Are Going Right
15. 100 Things That Are Going Wrong
16. 100 Reasons I Want To Stay Married/Committed
17. 100 Reasons I Don’t Want To Stay Married/Committed
18. 100 Things I Want In A Partner/Relationship
19. 100 Things I Have To Offer To A Partner/Relationship
20. 100 Fears I Am Having Right Now
21. 100 Things That Once Scared Me But Don’t Anymore
22. 100 Reasons To Save Money
23. 100 Things I Miss
24. 100 Sacrifices I Have Made
25. 100 Marketing Ideas For My Business
26. 100 Ways I Can Make Money
27. 100 Ways To Make A Difference
28. 100 Jobs/Careers I’d Like To Have
29. 100 Fears About Being A Multimillionaire
30. 100 Things I Believe In
31. 100 Achievements (Qualities) I Am Proud Of
32. 100 Things I Value In Life
33. 100 Ways I Help Others
34. 100 Things That Turn Me On
35. 100 Things That Turn Me Off
36. 100 Judgments I Make
37. 100 Things I Find Hard To Share
38. 100 Things I’m Disappointed About
39. 100 Things I’m Angry About
40. 100 Things I’m Sad About
41. 100 Things [Peoples, Places] I Love
42. 100 Things To Do When I’m Depressed
43. 100 Things To Do When I’m Alone
44. 100 Rules I Have Broken
45. 100 Skills I Have
46. 100 Feelings I Am Having Right Now
47. 100 Childhood Memories
48. 100 Things My Parents Used To Say To Me
49. 100 Ways In Which I’m Generous
50. 100 Ways To Be More Productive
51. 100 Things I Hate
52. 100 Things I Want
53. 100 Places I’d Like To Visit
54. 100 Things I’d Like Someone To Tell Me
55. 100 Things I’d Like To Hear
56. 100 Things I’d Like To Tell My Child
57. 100 Things I Want My Child To Know About Me
58. 100 Reasons To Have A Baby
59. 100 Reasons Not To Have A Baby
60. 100 Adjectives Describing Myself
61. 100 Decisions Other Have Made For Me
62. 100 Decisions I Made That Turned Out Well
63. 100 Things I’d Do If I Had Six Months To Live
64. 100 Expectations Other Have Of Me
65. 100 Expectations I Have Of Myself
66. 100 Judgments I Haven’t Released
67. 100 Ways To Be More Creative
68. 100 Things I Could Carry In My Pocket
69. 100 Things I’d Save If My House Were On Fire
70. 100 Things I Want To Tell My Mother [Father]
71. 100 Things I’d Never Tell My Mother [Father]
72. 100 Financial Fears
73. 100 Excuses I Make For Myself
74. 100 Things I Need/Want To Control
75. 100 Fears I Have About Giving Up Control
76. 100 Answered Prayers
77. 100 People I’d Like To Meet
78. 100 Reasons Why I Get Jealous
79. 100 People I Admire
80. 100 Tasks I’ve Been Procrastinating
81. 100 Memories From My Past
82. 100 Things That Nourish Me
83. 100 Things I Haven’t Finished
84. 100 Things I’m Glad I’ve Done
85. 100 Things I’ll Never Do Again
86. 100 Ways To Generate Income
87. 100 Principles To Live By
88. 100 People I Want To Forgive
89. 100 People I Want To Forgive Me
90. 100 Things To Forgive Myself For
91. 100 Mistakes I Have Made
92. 100 Lessons I Have Learned
93. 100 Ways To Be Healthier
94. 100 Things That Make Me Cry
95. 100 Things That Make Me Laugh
96. 100 Things I’d Delegate
97. 100 Thing I Want For My Birthday
98. 100 Possessions I’m Tired Of Owning
99. 100 Responsibilities That I’d Like To Avoid
100. 100 Things To Write A List Of 100 About