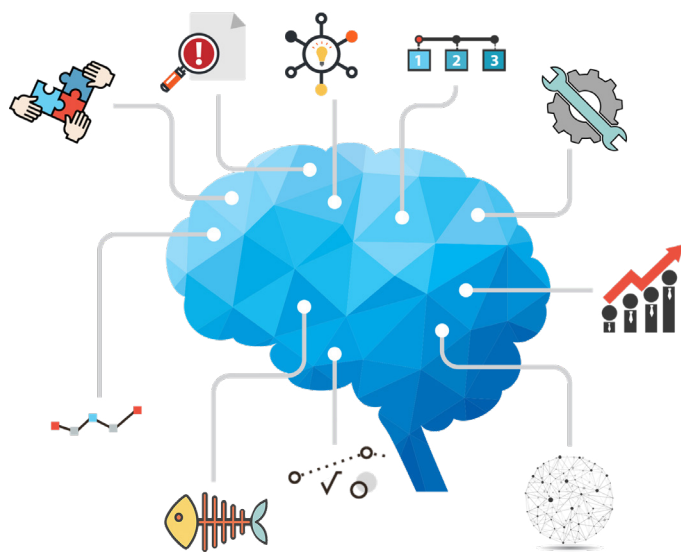




50 Thinking Tools to Help Learners Scale Capacities

Infographics for Social and Collaborative Learning



Ray Jimenez, Ph.D.
Chief Architect of Situation Expert

Visit www.SituationExpert.com
to preview how Thinking Tools
can help the learners scale their
thinking capacities.

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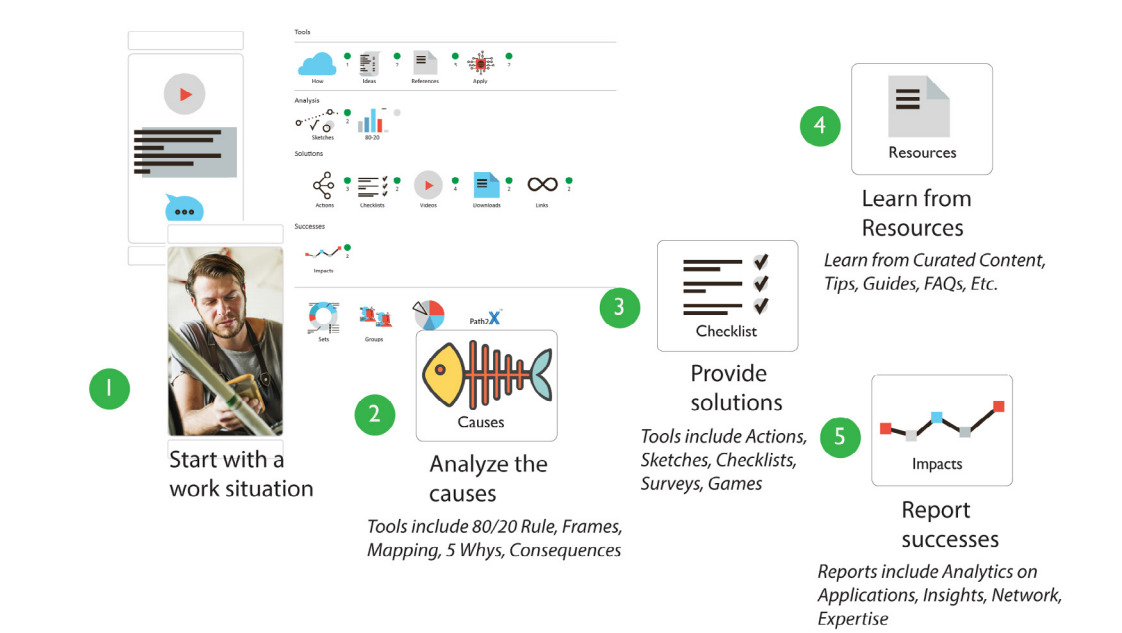
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Work-Based Learning Platform



The Process

The process starts with identifying a situation. Your learners can then dig deeper and analyze the causes using a variety of tools. They can also provide solutions or search ideas in experience and knowledge resources. Finally, your learners can post their successes.



Situation Expert is a Work Based Learning Platform (WLP) that provides learners both surface and deep learning experiences. It helps learners deal with work situations by creative critical thinking, decision making, analysis, solutions, pattern seeking, and experience sharing. Organizations can create and customize their own private accounts. Situation Expert is a cloud SAAS (Software-as-a-Service).

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How to Use Situation Expert Thinking Tools

The Situation Expert Thinking Tools help learners and workers scale their thinking beyond the skills or knowledge into the abilities to fix, solve and improve work. Each of the tool has a PNG image version. The infographics are best used when initiating conversations in social learning methods and collaborative environment.

These are suggested steps.

- (1) Create a place to post your discussions,
- (2) Post your question about a situation, for example,
“What is the root cause of this issue (name the issue)?
Please answer below using the Fish Bone Method,
- (3) Facilitate the postings from your team, learners and workers.

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Workflow Learning R&D - Group

Discussion Thread

Group Menu

My Progress

Back to Discussions

Solving an error in loading the page

More



Ray Jimenez, Ph.D.

Apr 08, 2020 09:13pm

4 Comments

Open

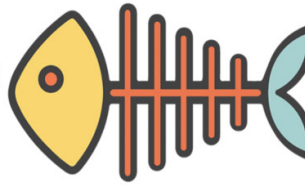
We have been encountering in one feature of the software that the loading of files is so slow and there are often errors. They are very inconsistent. What are the root causes of the issues? Please use the Fishbone thinking tool.

Fishbone

Thinking Tools

Fishbones tool helps find the possible causes for the Sitch (situation). It provides clarity on what to focus on when you fix, change or improve the Sitch (situation). It focuses your attention on the important things.

The Problem the way you see it.



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Add comment

Click and write your message here...



Robert leonardo

Apr 09, 2020 01:06am

Like Reply

Add to Favorites

Here are my lists of Analysis:

1. Internet Speed
2. Caching Issues Are Preventing Optimized Page Loading
3. Large Media Files Are Increasing Loading Times
4. Server performance
5. Too many file requests (RTTs)
6. Optimized Image
7. Computer performance
8. Too many redirects



Nikka Bacera

Apr 09, 2020 12:30am

Like Reply

Add to Favorites

Hi Ray, here's my analysis:

Problem: Find the cause of slow loading and errors in a page

Possible Causes:

1. Network Problem
2. Slow Web Hosting
3. Database Issue
4. Lots of traffic
5. Extra large images (and complex file format)
6. Code density
7. Too many file requests (RTTs)



Angela Myla Leonardo

Apr 09, 2020 12:03am

Like Reply

Add to Favorites

Problem: Find the cause of slow loading and errors in a page

Possible cause:

1. Unoptimized Images
2. JavaScript Issues
3. Too Much Flash Content
4. Excessive HTTP Requests
5. Not Making Use of Caching Techniques
6. Unclean Code
7. Too Many Ads
8. Not Using a Content Delivery Network
9. Large Media File
10. Site's Code Is Too Bulky
11. Internet Issues

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Checklist	Thinking Tools
<p>Checklists consist of steps, processes, procedures or lists of ideas to help fix, change or find a solution for the sitch, situation, event, challenge, etc. It serves as a quick guide to reviewing the main points.</p>	<input type="checkbox"/> <input type="text"/>
	<input type="checkbox"/> <input type="text"/>
	<input type="checkbox"/> <input type="text"/>
	<input type="checkbox"/> <input type="text"/>
	<input type="checkbox"/> <input type="text"/>
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Instant Thinking	Thinking Tools
<p>Instant Thinking is your initial thought or the preliminary ideas formed upon reading the Sitch (situation). This tool kickstarts brainstorming and thorough analysis of the problem.</p>	<p>What is your Instant Thinking?</p>
	<p>Add Comment</p> <input type="text"/>
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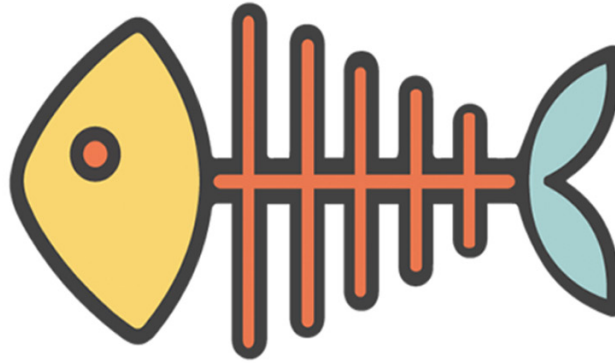


Fishbone

Thinking Tools

Fishbones tool helps find the possible causes for the Sitch (situation). It provides clarity on what to focus on when you fix, change or improve the Sitch (situation).

The Problem the way you see it.



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Impacts

Thinking Tools

The Impacts tool is where you rate the benefits gained as a result of finding the solution to the Sitch (situation). It is a fast, accurate and cost-efficient way of measuring results.

Add Comment

1 ----- 5 ----- 10

Efficiency



Savings



Quality



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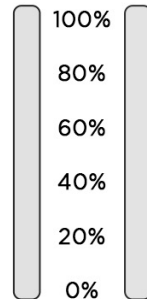


80/20 Ideas

Thinking Tools

80/20 Ideas tool is about asking the question "Which aspect of the problem or solution causes the greatest consequences or results?" It is based on the Pareto Principle which states that 20% of the problems and issues cause 80% of the consequence or results.

Problem / Benefit



Cause / Solution

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Sketches

Thinking Tools

Sketches tool is where you can draw your ideas and observed patterns, similarities or dissimilarities to help you visualize and better understand the problem.



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Frames

Thinking Tools

The Frames thinking tool presents a 360-degree view of the Sitch (situation). It helps you to consider other people's perspective and allows you to understand them better and refine your approaches and solutions.

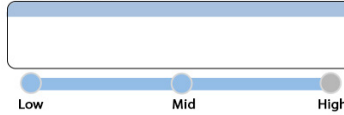
Other Frame



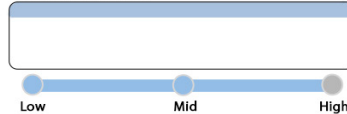
Other Frame



My Frame



Other Frame



Other Frame



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Group Think Comments

Thinking Tools

Group Think Comments is an open discussion about the sitch (situation). It is where you can post your observations, ask questions, reply and help others, and add files, links, photos, and videos.

Hi Everyone,

This is an open discussion about the sitch. Please post your observations, ask questions, reply and help others, add files, links, photos and videos. Use the other actions in Analysis, Solutions and Impacts for more specific actions.

Add Comment

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Pros and Cons		Thinking Tools
<p>To thoroughly assess solutions and make go or no-go decisions, list and weigh the advantages or the favorable reasons against the disadvantages or the unfavorable consequences of the solution.</p>	+ Pros <div style="background-color: green; height: 10px; margin-bottom: 5px;"></div> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	- Cons <div style="background-color: red; height: 10px; margin-bottom: 5px;"></div> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
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What Ifs		Thinking Tools	
<p>The What Ifs tool enhances your decision process by helping you visualize the problem, anticipate possible consequences, prepare for different courses of action, and check for the best possible solution.</p>	<p>Situation</p> <ul style="list-style-type: none"> • <div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 2px solid black; height: 100px; margin-right: 10px;"></div> <div style="display: flex; flex-direction: column; gap: 20px;"> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> <div>Option 1</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> <div>Option 2</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> <div>Option 3</div> </div> </div> </div>	<p>Impact 1</p> <ul style="list-style-type: none"> • <p>Impact 2</p> <ul style="list-style-type: none"> • <p>Impact 3</p> <ul style="list-style-type: none"> • 	
		www.SituationExpert.com Situation Expert™	

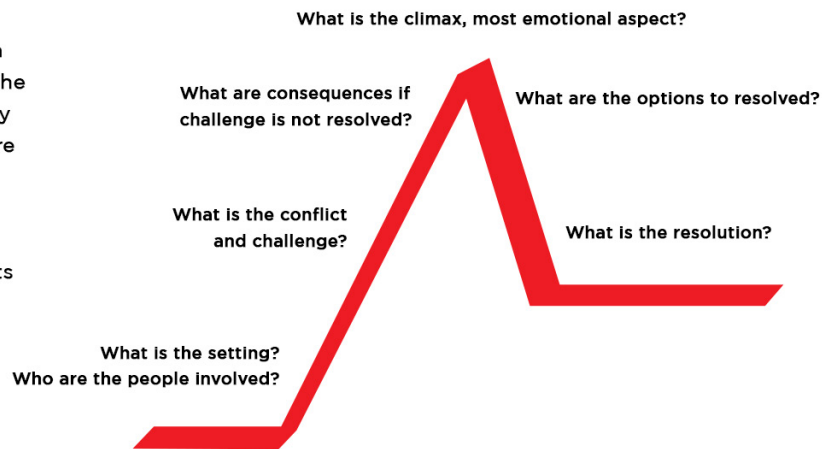
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Stories

Thinking Tools

Stories tool facilitates problem analysis by using the story arc. The story arc helps you figure out the best resolution by defining the important elements of the issue or situation



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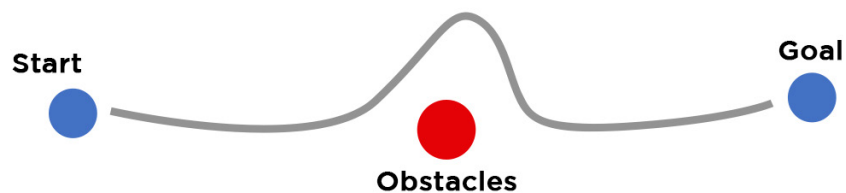


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Workarounds

Thinking Tools

Workarounds are your "think outside the box" solutions when the usual or standard solutions or fixes are not working.



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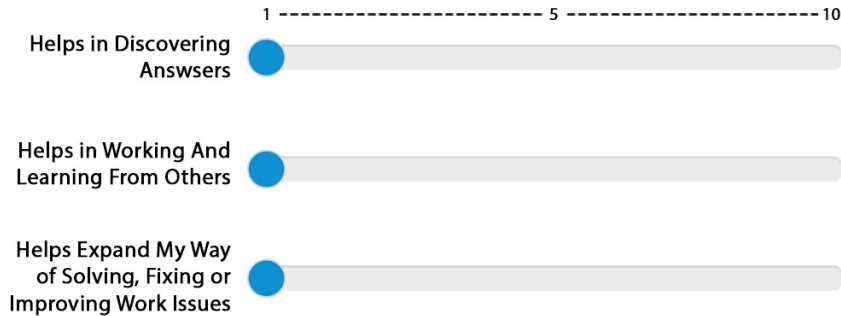
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Feedback

Thinking Tools

Feedback tool is where workers and learners evaluate how helpful the Sith (situation) process was for them and the team. It is also a good way to determine which areas are working and which ones need improvement.



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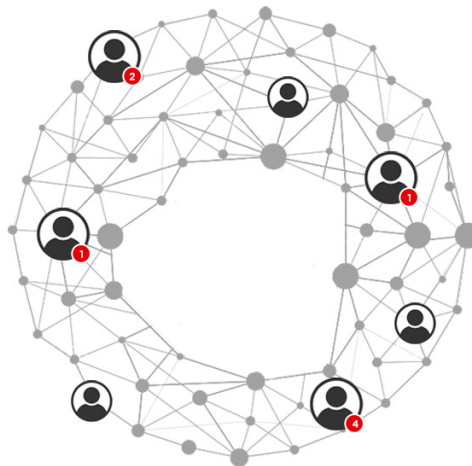


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Sense-Making

Thinking Tools

The Sense-Making tool shows the essence of the patterns and how valuable ideas from others are connected. It helps you discover the key ideas and learning takeaways from doing the Sith (situation).



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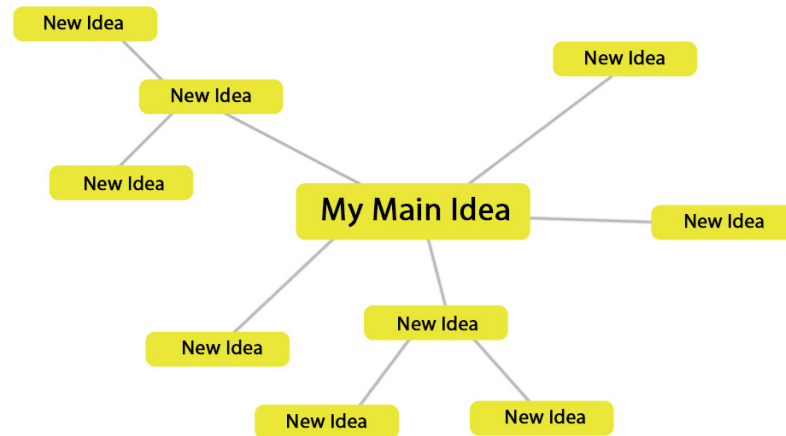
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Mapping Ideas

Thinking Tools

In Mapping, you are able to visualize the relationships of your ideas. It helps you gain clarity of impacts, causes and effects, and how parts add or minimize value to each other.



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Contributions

Thinking Tools

The Contributions tool is for sharing common answers, solutions, and content to help others. It can also be used to provide helpful references from distinguished authors and experts with the intent of producing the most reliable answers and convincing presentations.

Surface Source

General: *Usually casual, common, overview, and quickly available.*

Deep Source

Opposing Views: *Contrasting and divergent points, limitations, and strengths.*

Reliability: *Fact, research, history, stories, results and impacts.*

Reputation: *Author, expertise (in-house, outside), and source.*

Follow-ups: *For further study, review, research, and testing.*

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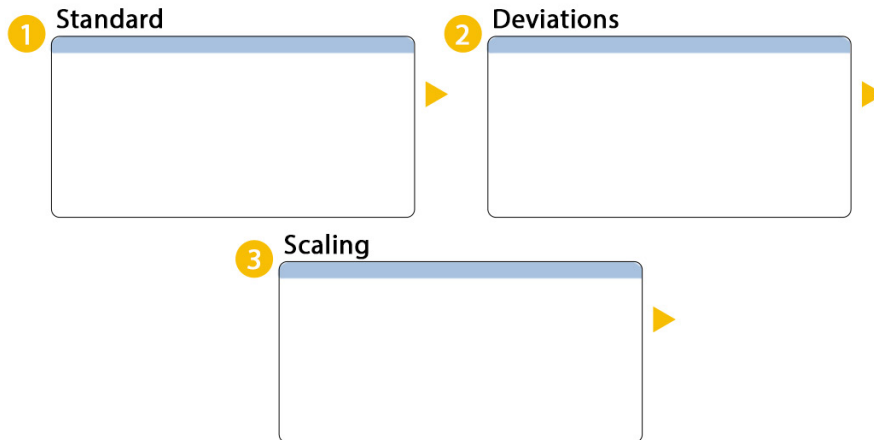
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Scaling Capability

Thinking Tools

Scaling is a method of dealing with unexpected, unknown or exception work issues. It helps you "think through" the problem by considering the current standards, defining deviations, and then finding or creating new ways, methods or solutions.



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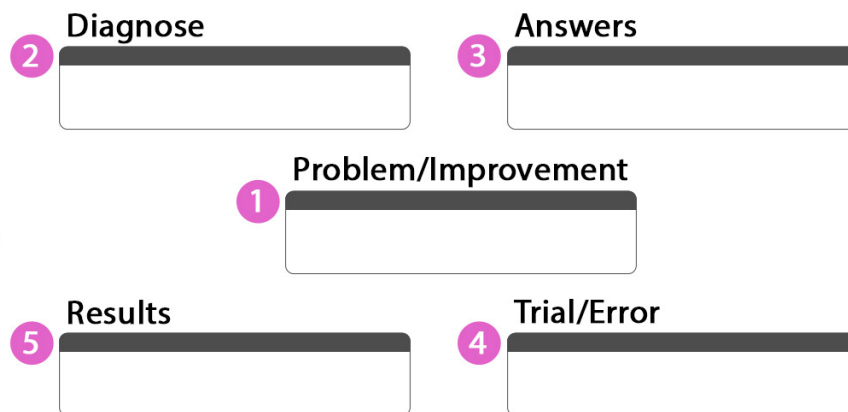


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Improving Work

Thinking Tools

The Improving Work tool helps you fix, solve and improve work issues by following the 5-step diagnostic process. The steps allow you to have an organized "thinking process" to achieve better quality results.



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Go / No Go

Thinking Tools

Go / No Go is a decision tree tool. It allows you to reflect on your analysis or solutions before committing to a specific action.

Problem / Improvement

Question

Go

No Go

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Troubleshooting

Thinking Tools

The tool helps you analyze the work situation by creating a troubleshooting path. It allows you to visualize the flow of your options and choices.

Problem/Improvement

Question

YES

NO

Question

Question

YES

NO

YES

NO

Question

Question

YES

NO

YES

NO

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Steps / Procedures	Thinking Tools
<p>The Steps / Procedures tool helps you prepare a flowchart or a series of steps and procedures. It is valuable when you need to further review the steps, flow, and, its sequence with your teams and ask for their inputs.</p>	1. <input type="text"/>
	2. <input type="text"/>
	3. <input type="text"/>
	4. <input type="text"/>
	5. <input type="text"/>
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Lists	Thinking Tools	
<p>The Lists tool is a series of action items or a checklist of activities that helps you organize a plan of action. It can also be a listing of goals, timelines, assignments you need to accomplish in order to fix, solve or improve the work situation.</p>	<div>1 Goal</div> <div>2 Description</div> <div>3 Timeline</div>	
	<div>4 Assign</div> <div>5 Status</div> <div>6 Others</div>	
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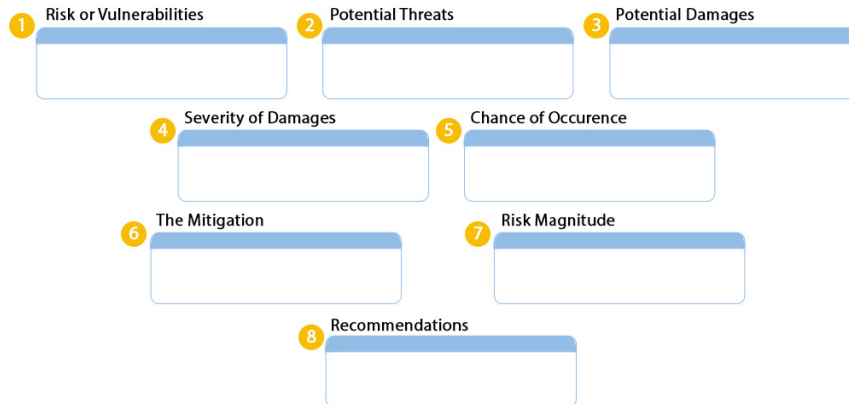
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Risk Analysis

Thinking Tools

The Risk Analysis tool helps you to take steps in planning and managing risks, and reducing costs and negative impacts.



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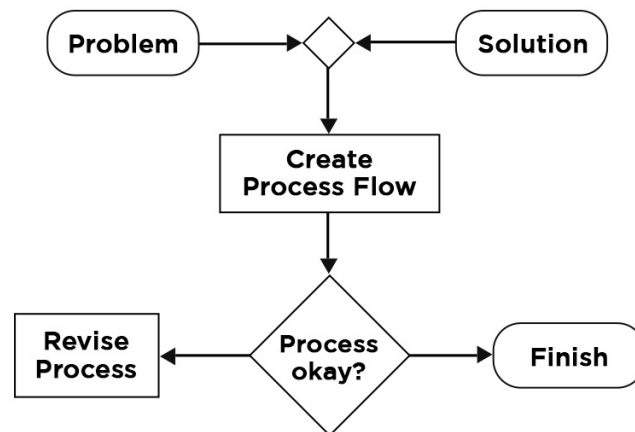


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Process Flow

Thinking Tools

A business process flow is a way of visualizing and documenting the steps in a business process. Flow charts document inputs or requests for information, products or any other deliverable; the procedural steps to satisfy that request; and the output, or deliverable, that is generated by the input.



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Data Analysis

Thinking Tools

The term data analytics refers to the process of examining datasets to draw conclusions about the information they contain. Data analytic techniques enable you to take raw data and uncover patterns to extract valuable insights from it.



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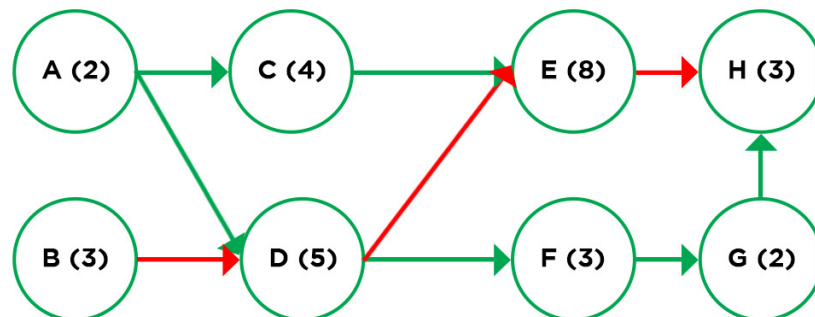


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Critical Path

Thinking Tools

Critical Path Method is an algorithm for scheduling a set of project activities. In project management, a critical path is the sequence of project network activities which add up to the longest overall duration, regardless if that longest duration has float or not. This determines the shortest time possible to complete the project.



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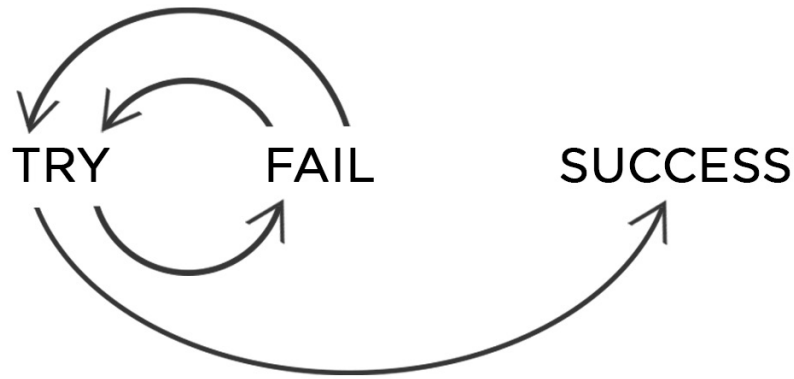
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Trial and Error

Thinking Tools

Trial and Error is a method for reaching a correct solution or satisfactory result by trying out various means or theories until error is sufficiently reduced or eliminated.



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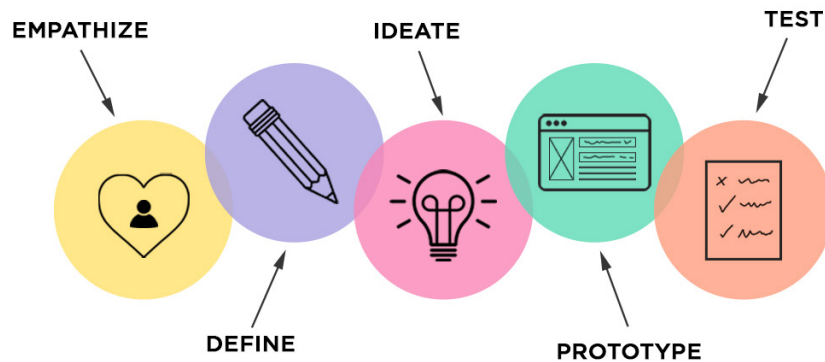


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Design Thinking

Thinking Tools

Design Thinking is that designers' work processes can help us systematically extract, teach, learn and apply these human-centered techniques to solve problems in a creative and innovative way – in our designs, in our businesses, in our countries, in our lives. It applies to all other professions and work endeavors.



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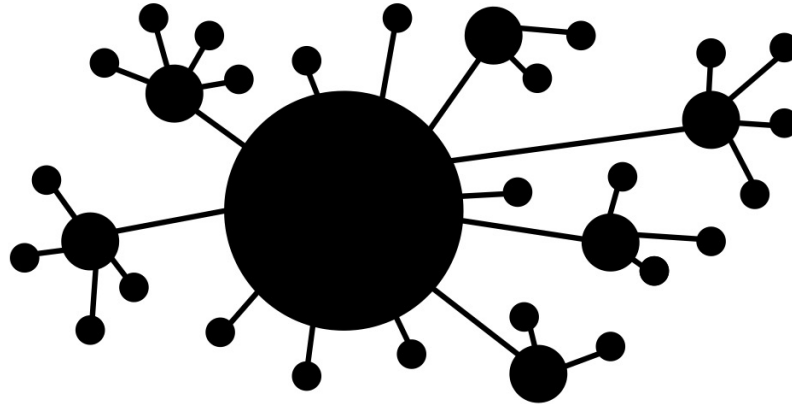
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Network Effect

Thinking Tools

Network effect occurs when a product or service becomes more valuable to its users as more people use it.



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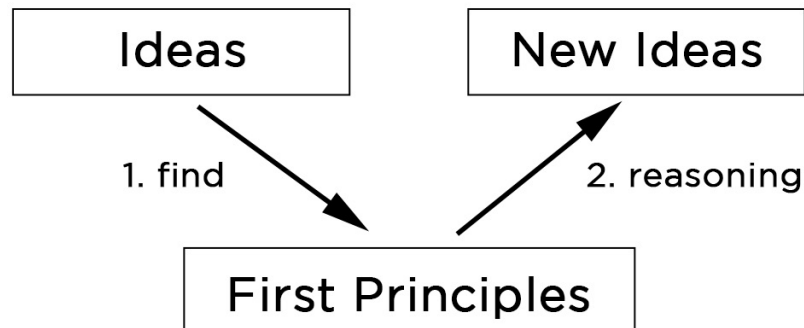


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First Principles

Thinking Tools

Sometimes called reasoning from first principles, it's a tool to help clarify complicated problems by separating the underlying ideas or facts from any assumptions based on them. What remains are the essentials.



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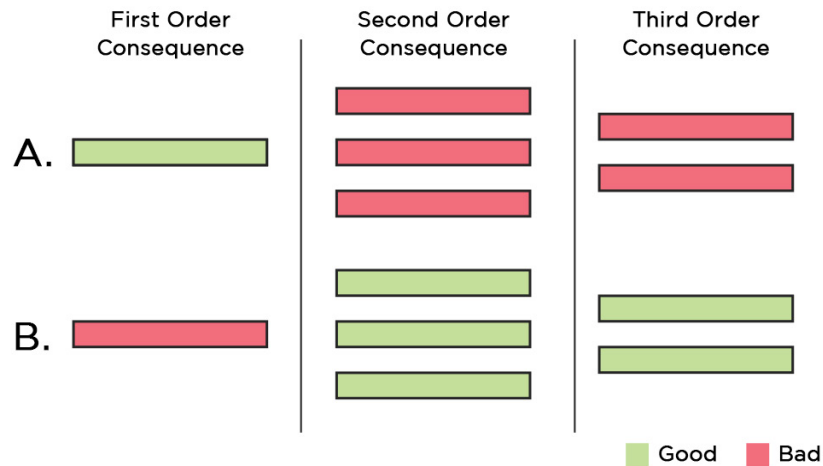
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Second-order Thinking

Thinking Tools

Second-order thinking is going beyond easy, simple and predictable. It involves in-depth and forward thinking analysis. It dives into the nitty-gritty details to get the most optimal and holistic results.



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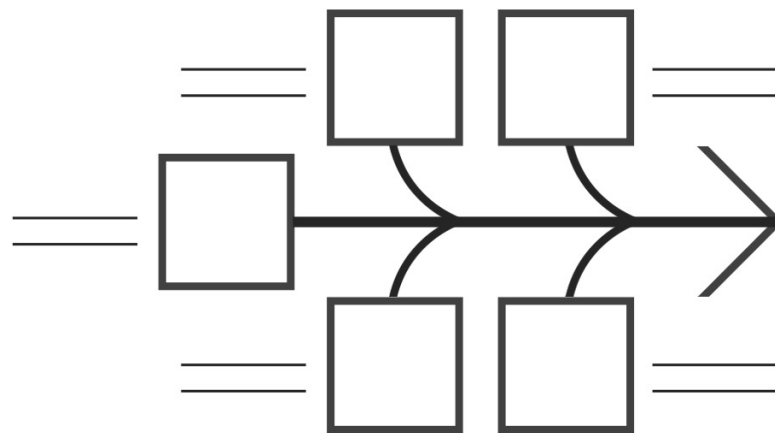


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5 Whys

Thinking Tools

5 Whys is used to explore the cause and effect relationships crucial to a particular problem. Not all problems have a single root cause. To discover the other underlying causes, repeat the method by asking a different sequence of Why questions each time.



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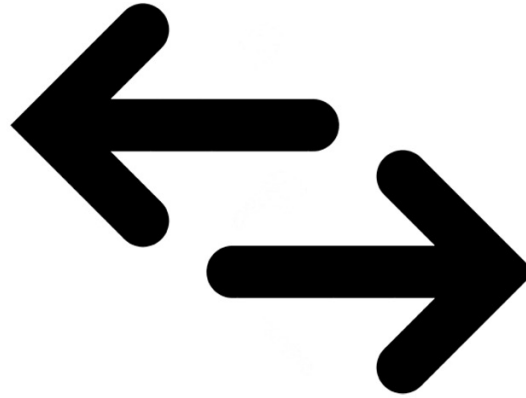
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Inversion Thinking

Thinking Tools

Inversion is a powerful tool to improve your thinking because it helps you identify and remove obstacles to success. The root of inversion is "invert," which means to upend or turn upside down. As a thinking tool it means approaching a situation from the opposite end of the natural starting point.



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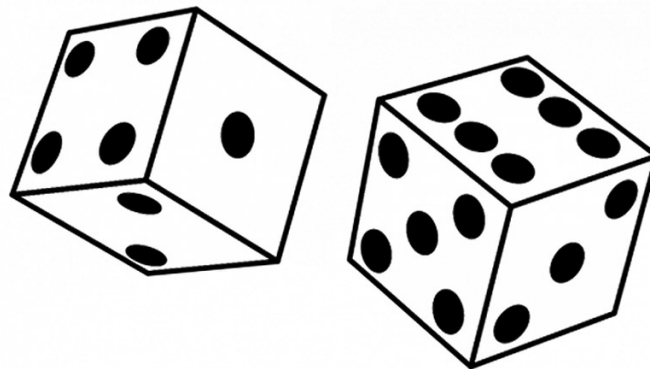


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Probabilistic Thinking

Thinking Tools

Probabilistic thinking joins intuitive and quantitative ideas of chance with mathematical problem solving techniques to estimate the likelihood of an event coming to pass. It is how people make sense of the uncertainty in the world around them. It sounds complex, but it's something we all use without much conscious effort.



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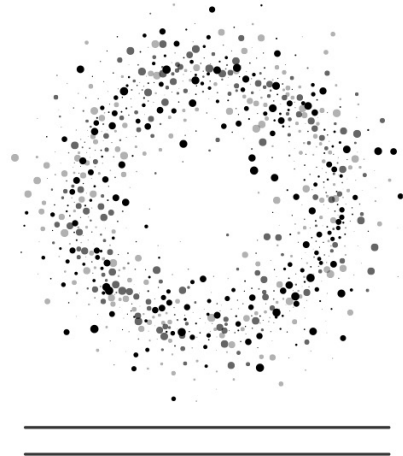
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Random Thinking

Thinking Tools

We are "fooled" by random effects when we attribute causality to things that are actually outside of our control. If we don't course-correct for this fooled-by-randomness effect - our faulty sense of pattern-seeking - we will tend to see things as being more predictable than they are and act accordingly.



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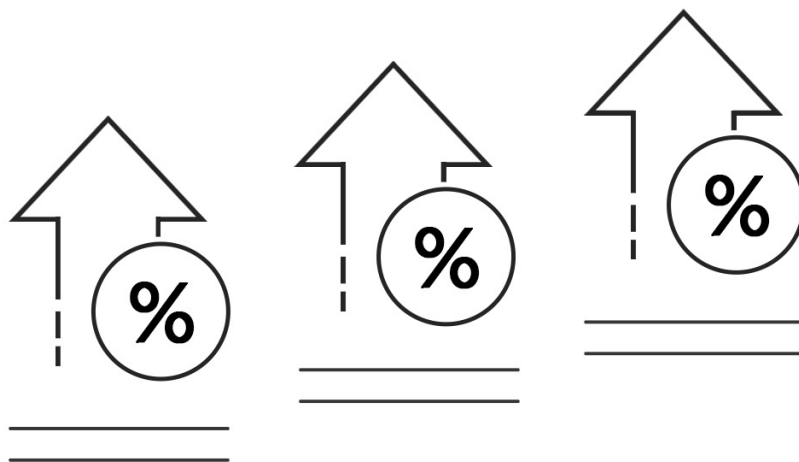


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Compounding

Thinking Tools

Compounding is the process by which we add interest to a fixed sum, which then earns interest on the previous sum and the newly added interest, and then earns interest on that amount, and so on ad infinitum. It is an exponential effect, rather than a linear, or additive, effect.



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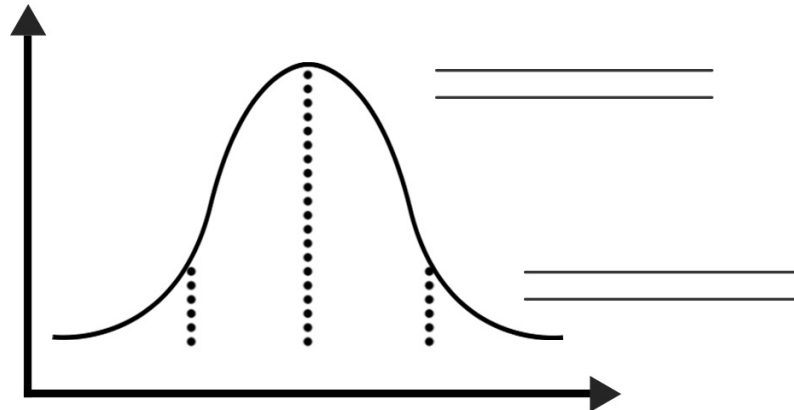
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Bell curve / Normal Distribution

Thinking Tools

Bell curve is the graphical representation of the probability density of the normal distribution. It minimizes or eliminates any undue influence or bias on the variations and ensures that the subject's results are only assessed relative to its peers.



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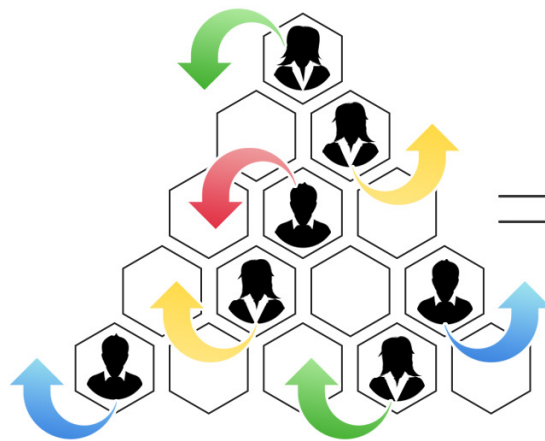


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Churn

Thinking Tools

Also known as rate of attrition or customer turnover. Studying customer behavior, demographics, usage patterns, etc. help teams and leaders focus on improving customer retention strategies to reduce churn rates.



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Scale

Thinking Tools

In studying complex systems, take into consideration that properties or behaviors are sensitive to scale. They tend to change when you scale them up or down.



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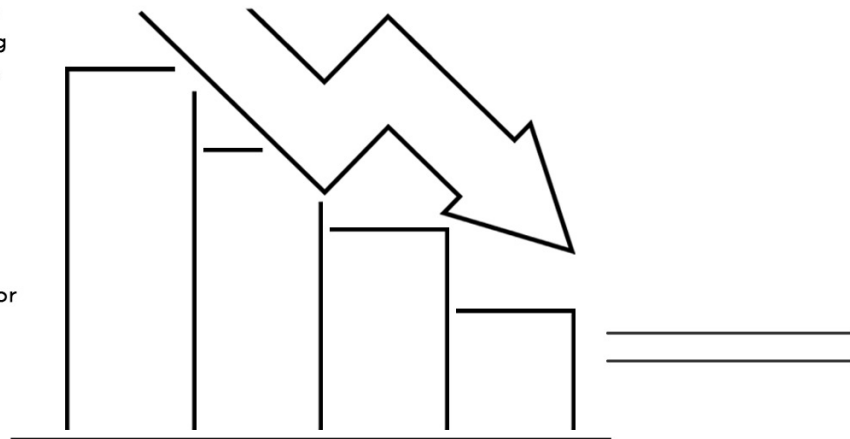


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Diminishing Return

Thinking Tools

Its concept shows that after reaching a certain point, an increased level of inputs will not result in an equal increased level of output but rather an eventual decrease in yield or output.



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Butterfly Effect

Thinking Tools

In chaos theory, the butterfly effect is the sensitive dependence on initial conditions in which a small change in one state of a deterministic nonlinear system can result in large differences in a later state. One small change or action can cause very significant ripple effects.



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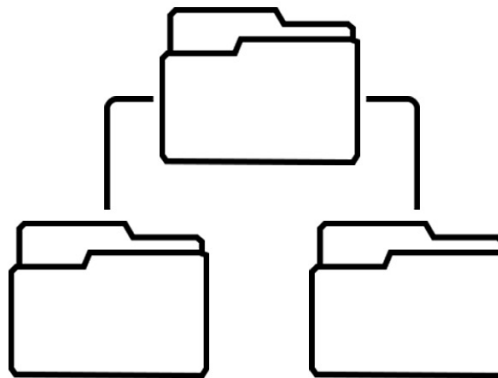


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Redundancy

Thinking Tools

The concept of backup systems, also known as redundancy, originated in the field of engineering. The presence of back-up components in a system are vital in the event that one part of the system fails, the system as a whole will still be able to function.



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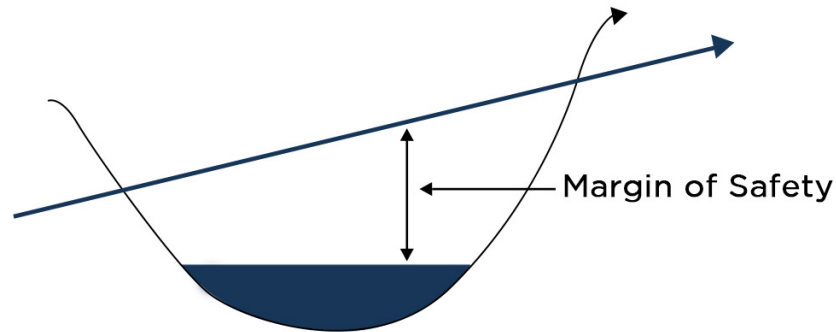
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Margin of Safety

Thinking Tools

Margin of safety allows room for miscalculations, unpredictable circumstances, analytical errors, etc in order to avoid substantial losses over time



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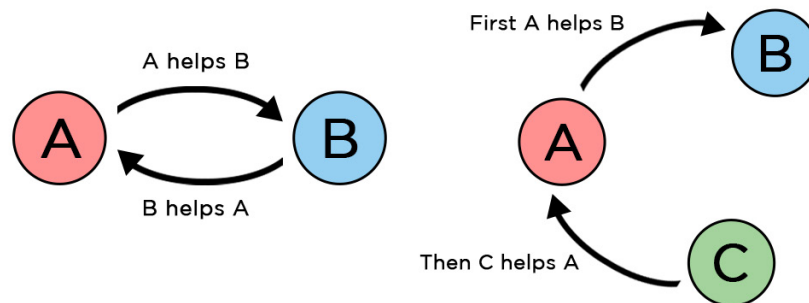


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Reciprocity

Thinking Tools

Also known as the Golden Rule, the most basic and useful ethical theory. Application of Reciprocity in difficult situations can help reveal what actions are ethical or not.



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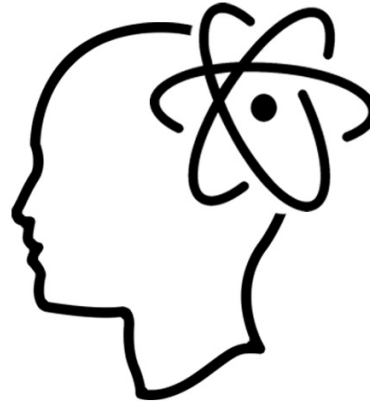
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Relativity

Thinking Tools

The important aspect of the Relativity theory to reflect on is the idea that an observer cannot truly understand a system of which he himself is a part. You need to step back to gain a more holistic perspective of the situation.



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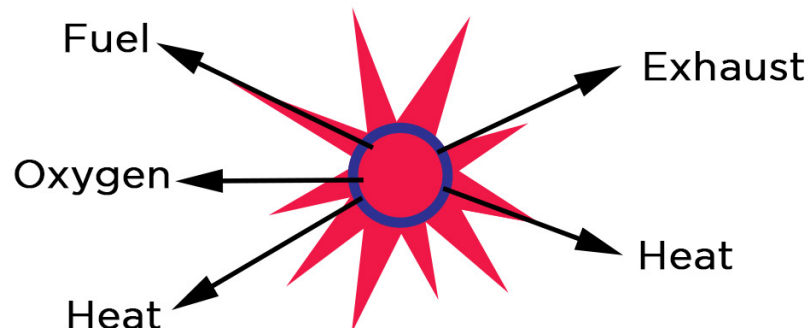


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Activation Energy

Thinking Tools

Activation energy is the amount of effort we need to exert in order to get an activity or task started. The more activation energy something requires, the harder it gets to get started.



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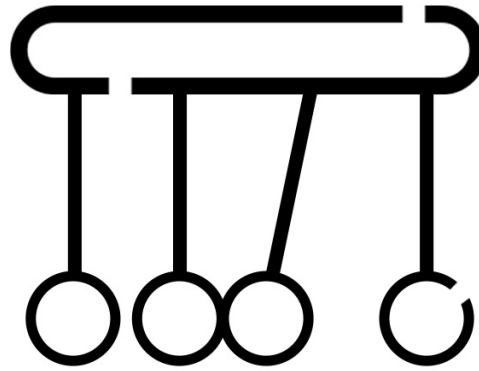
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Inertia

Thinking Tools

Inertia in decision making is the tendency to repeat previous choices regardless of the outcome. While it favors consistency and minimizes cost and effort, it doesn't allow room for growth and improved results.



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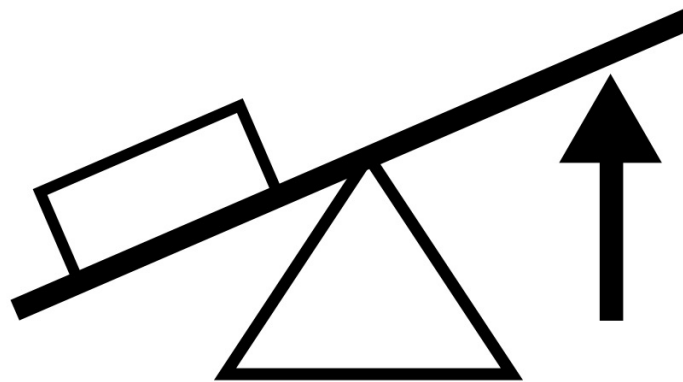


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Leveraging

Thinking Tools

With a small amount of input force, we can make a great output force through leverage. It is important to know how and when to deploy leverage in order to gain maximum returns.



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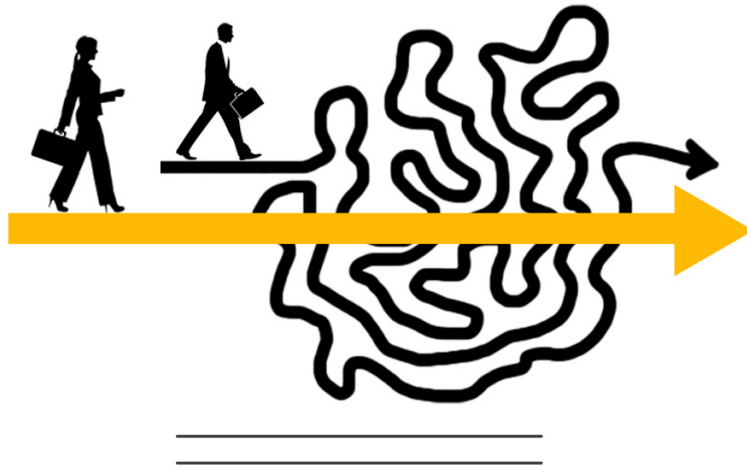
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Heuristics

Thinking Tools

A **heuristic** technique is any approach to problem solving or self-discovery that employs a practical method that is not guaranteed to be optimal, perfect or rational, but which is nevertheless sufficient for reaching an immediate, short-term goal.



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Bottlenecks

Thinking Tools

Bottlenecks are setbacks or obstacles that slow down or delay a process. Analyzing process bottlenecks helps define its contributing factors and create alternative solutions to remove these unwanted buildups of work.



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