



THESEUS
THINK WELL.

The Theseus Learning System
A Practical Guide to Mastering Essential Thinking Skills

Lesson Book

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Overview

What You Will Learn:

- Why critical thinking is important to your success
- What the **Theseus Learning System** is all about
- How the TLS differs from other approaches
- What this Lesson Book contains

The Theseus Learning System: A Practical Guide to Mastering Essential Thinking Skills



Why Critical Thinking?

Have you ever had an argument with someone who just wasn't making sense? Maybe you wish you'd said something, but the moment passed before you could formulate a reply.

Or maybe you had great reasons for doing something, but when you tried to explain your thinking, it didn't come out right. The ingredients for a compelling case were there, but the recipe was missing.

We need clear, persuasive thinking—not only in our personal lives, but also in business, education, and government. The vital importance of critical thinking is widely recognized, but year after year, educators and business leaders conclude that we are simply not doing enough to develop the necessary skills.



Fortunately, there are fun new ways to master the basics. That's what the **Theseus Learning System** is all about. We've taken the most interesting and effective approaches to learning critical thinking and put them together in a dynamic, interactive course of study. The result is in your hands.

The Theseus Learning System: A Practical Guide to Mastering Essential Thinking Skills



o Welcome to the Theseus Learning System

The path of critical thinking will take you to fascinating and challenging lands. Along the way, you will acquire habits of mind that deepen your understanding and enrich your experience of the world.

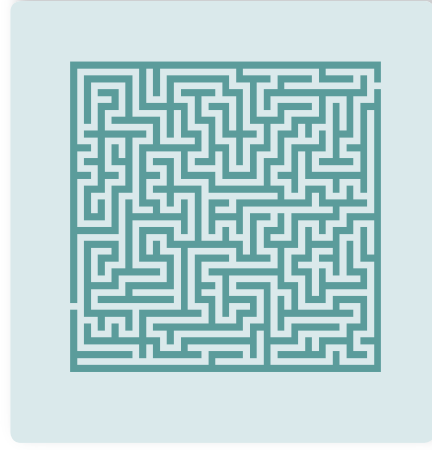


The Greek hero Theseus

will serve as our model.

A famous myth tells how Theseus navigated a bewildering labyrinth and slew the monster, the Minotaur, who lived inside. Theseus succeeded not only by virtue of his strength and courage, but also by a clever strategy. The princess Ariadne had given him a spool of golden thread to dole out as he penetrated the maze. He retraced the path marked by the thread and emerged unharmed and triumphant.

Critical thinkers face problems every bit as daunting as the Minotaur's labyrinth. Navigating them requires clarity and ingenuity. The **Theseus Learning System** will teach you how to map even the most complicated thought structures. By following the system's "golden thread," you will be able to defeat the lurking monster of confusion and emerge triumphant—like Theseus!

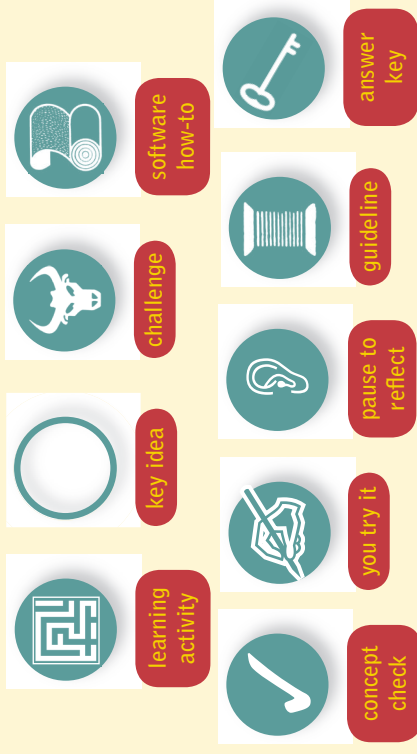


o What is the Theseus Learning System?

The **Theseus Learning System** is a fun and challenging way to develop essential critical thinking skills. It's a course in critical thinking with a software component that actually helps you *visualize* thought. The TLS will show you how to organize your ideas within a colorful, interactive learning environment. It will also give you feedback that can help you frame clear, compelling arguments. Once you get the hang of using its diagrams, critical thinking, reading, and writing will all come much more easily!

You can use the **Theseus Learning System** to develop persuasive essays or presentations, to analyze written arguments, or simply to give your brain a stimulating workout.

The following icons call attention to key features of this Lesson Book. Look for them and they'll guide you along the way. The answer key icon indicates that a sample answer is provided in Appendix A.



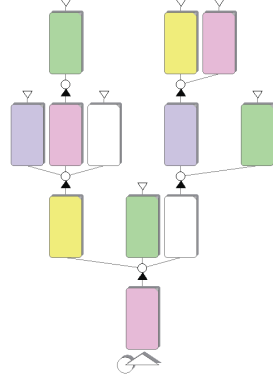
The Theseus Learning System: A Practical Guide to Mastering Essential Thinking Skills



How Does It Work?

The **Theseus Learning System** shows you how to

- Break down complex thought structures into their elements
- Arrange these elements spatially so that the underlying logical structure becomes clear
- Tighten the structure into a convincing argument



It works because the activity of diagramming thought has a remarkable effect on reasoning skills. In fact, studies show that a few months of mapping arguments can do as much to develop critical thinking as an entire undergraduate education!¹

We'll look at how critical thinking skills develop and how diagramming speeds the process along.

1 "Teaching Critical Thinking: Some Lessons From Cognitive Science." Tim van Gelder. College Teaching Vol. 53/No. 1, pp. 41-46.

Why Use the Theseus Learning System?

It's fun! You get to see your ideas and arrange them into colorful, dynamic structures. (It's almost like playing with Legos!)

It's effective. The basic approach develops critical thinking skills more rapidly and effectively than most college courses do.

It's practical. You can apply the techniques to any subject that interests you. Use the **Theseus Learning System** on homework or job assignments: The software will automatically convert your thought diagrams into text. You can then fine-tune the results into convincing essays and presentations.

It's timely. The **Theseus Learning System** is designed to equip you for success in today's information-rich world, where thinking and communication skills are essential. Both colleges and employers want people who can think, read, and write critically. They need people who can cut through the fog of too much data, ask good questions, and frame ideas so they have an impact. By helping you build these skills, the **TLS** will equip you for success!

What Makes the Theseus Learning System Different?

Traditional approaches to teaching critical thinking are constrained by the linearity of text. The **Theseus Learning System** is different. It is visual and hands-on, so it engages your full brain. Ideas become building blocks, so you quickly get a handle on how to work with them.



With **Theseus**, you learn to think by using your hands and eyes!

For centuries, outlines represented the best way to organize ideas. But no longer: The **Theseus Learning System** takes idea assembly to the next level. It shows you how to untangle complex idea sets using the familiar, practical logic of question-and-answer. Once you see how claims raise questions, and how answers lead to further questions, your thoughts actually begin to organize themselves!

The Theseus Learning System: A Practical Guide to Mastering Essential Thinking Skills



◦ Is the **Theseus Learning System** For You?

The **Theseus Learning System** is designed for people who are just learning the art of critical thinking.

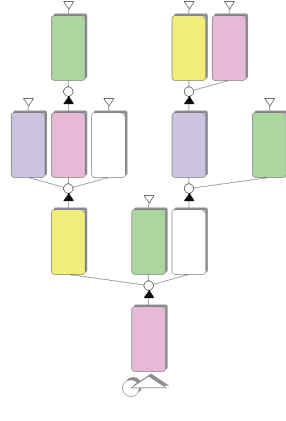


- High school students will find that the **Theseus Learning System** is excellent preparation for the SAT Writing and Critical Reading tests—and for college.
- College students will find that the **TLS** helps them master core skills.
- Young professionals need critical thinking skills, too. The **TLS** provides basic training for people who want to make a living using their brains.

◦ How Should You Approach It?

Play with it! Building with ideas is challenging and fun. Apply the **Theseus** approach to topics that interest you. Diagram complex thought structures and explore the possibilities that open up!

Know that it won't always be easy. Thinking can give you a real workout, especially if you care enough to do it well. You'll need to practice your new skills, exercise your judgment, and sweat the details.



On the bright side, the **Theseus Learning System** targets all of the basic critical thinking muscles. Think of it as circuit training for your brain!

You can view this Lesson Book as your personal trainer. Let it walk you through the program and explain key processes.

◦ What To Expect

The first part of this Lesson book introduces you to the **TLS** software and the basic principles of critical thinking. You'll learn how—and why—to arrange your ideas into a structure we'll call a "thought tree." In the second part you'll learn more about how to organize thinking effectively. You'll have opportunities in the concluding lesson to apply your new skills to a series of exciting challenges. The appendices include an answer key to the exercises scattered throughout the text as well as some reference guides. **Let's get started!**

Part One: Basic Visual Thinking

Lesson 1 Seven Basic Thinking Skills

What Critical Thinkers Do

What You Will Learn:

- The seven basic skills involved in higher-order thinking
- How to master them

The Theseus Learning System:
Lesson 1 - Seven Basic Thinking Skills

What Critical Thinkers Do



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What can you do to become an effective critical thinker? In this lesson, we look at seven skills that such thinkers routinely use. All seven are simple, and all can be learned. The principles behind them, though, are surprisingly powerful. Keep them in mind, apply them in the ways described in this Lesson Book, and your thinking skills will develop rapidly!

The Theseus Learning System:
Lesson 1 - Seven Basic Thinking Skills
What Critical Thinkers Do



o Principle 1: Know the Problem

To work effectively at anything, you have to know the problem. After all, if you don't, it's pretty hard to solve it!

Applied to thinking, this first principle means *know the question* you are *trying to answer*. What makes this difficult is our natural tendency, once we glimpse a question, to seize immediately on an answer. Researchers call this "answer bias," and it is a major cause of sloppy thinking.

The first rule is *know the problem*. Applied to thinking, this means *know the question you are trying to answer*.

The antidote is simple: Make a habit of attending to questions. Get to know them. Put them into words. Dwell on them a bit. Know where they come from and understand what would satisfy them. In a word, befriend them!



you try it

Practice getting to "know the problem" by scanning the editorial page of today's newspaper. (If you don't have a copy, you can check online.) Pick out any opinion pieces that interest you and see if you can name the core problem that each is trying to address.

(Don't worry if you get stuck. **Theseus** will soon have you strengthening the relevant thinking muscles!)



key idea

The Theseus Learning System: Lesson 1 - Seven Basic Thinking Skills What Critical Thinkers Do



o Principle 2: Break It Down

A good coach will break down throwing a football into footwork, body position, head fakes, follow-through, and so on. Then he'll show the player how the moves fit together. Likewise, skilled thinkers make a habit of breaking down complex problems. They divide them into simpler ones, solve *them*, and then put the pieces back together.

The **Theseus Learning System** can be your thinking coach. It shows you how to break thinking down. The process has distinct stages, and often they can best be handled one at a time. With **Theseus's** guidance, you'll learn to recognize the basic components of thought and assemble them, piece by piece, into clear, effective structures.



pause to
reflect

You've thought about things all your life. How do you go about it? Reflect on past thinking episodes, and see if you can pick out some of the things you did. Do you resort to any processes again and again? Describe these processes briefly, and give them labels. How do the processes you identified fit together?

There are many ways to answer this question. This Lesson Book taken as a whole, is one answer. The point of the exercise is to try **your** hand at thinking about thinking.

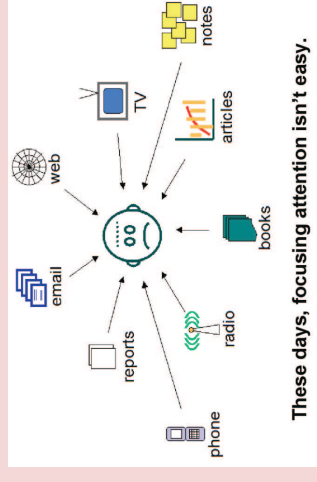
o Principle 3: Focus Attention Where It's Needed

To think well, you need to pay attention to the right things. But how are you supposed to know what they are? Tough problems have a way of pointing in several directions at once, and it is easy for attention to wander. And of course, corraling your own attention is only part of the problem. To communicate effectively, you need to focus the attention of others. That isn't easy in a world of distractions and shrunken attention spans.

The **TLS** shows you how to keep attention "on point" (in a precise logical sense that we'll talk about later). It teaches you some simple but effective "attention management" techniques.



pause to
reflect



What happens to your attention when you sit down to write an essay? Are you able to focus it effectively? Why or why not? When a poor speaker addresses a group, what happens to the group's attention? What happens when the speaker is enthralling?

Create a journal entry on the topic. What's the secret to focusing attention effectively? (We'll revisit this question in Lesson 7.)

The Theseus Learning System: Lesson 1 - Seven Basic Thinking Skills

What Critical Thinkers Do



o Principle 4: Monitor Your Thinking

Effective thinkers think about thinking. They reflect and self-correct. They pay attention to *how* they think as well as *what* they think. They catch mistakes and learn from them.

This habit of mind is called “meta-cognition.” It has been linked to accelerated learning and exceptional cognitive performance. You don’t need to be a genius to do it, however. You just need to be able to freeze a thought process and examine it carefully. It’s like taking a snapshot or making up a microscope slide and then giving it another look.



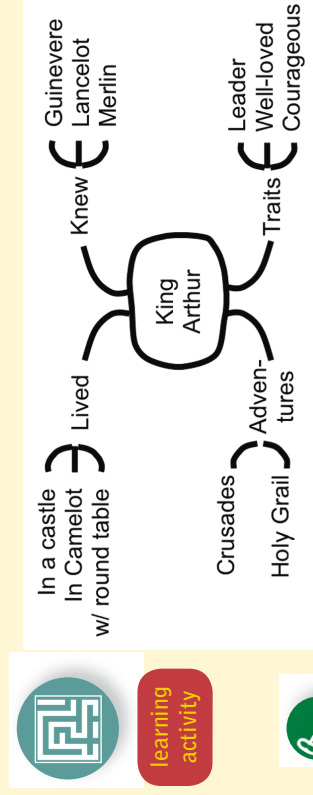
But what should you point your mental camera at? What should you focus the mind’s microscope on? The **Theseus Learning System** will show you which aspects of thinking are important to monitor.

o Principle 5: Picture It!

Many capable critical thinkers can actually *picture* thought: They visualize its logical structure in order to *see* its strengths and weaknesses. For them, thinking is not abstract and slippery, but very real.

Even thinkers who do not naturally picture their thoughts can benefit from learning to do so. Diagramming arguments can produce dramatic improvements in critical thinking skills.

The **Theseus Learning System** offers a unique system for picturing thought in diagrams. With the TLS, you can drag, drop, and arrange your way to thought structures ordered by basic logical principles. Your thoughts become building blocks that you can see—and practically touch. It’s almost like getting your hands on your ideas!



Practice picturing thought: Draw a “map” like the one above to show what you know about, say, dinosaurs. (Don’t like dinosaurs? Try horses, cars, or baseball!)

o Principle 6: Order Your Thoughts

Effective thinkers are constantly organizing information.

We all look for patterns to make sense of our perceptions. When we can't find patterns (that is, order), information is of little value, and thinking is laborious. When information is organized, however, it becomes useful. We assimilate it more easily, remember it better, apply it more effectively, and draw better conclusions. Thinking speeds up and communication improves.

When you work with ideas, you need to structure them purposefully. We'll show you how to organize your thoughts to achieve clarity. The same organizing principles will help you communicate your ideas convincingly.



learning
activity

Read quickly through the following list of items. Then set the Lesson Book aside, take a short break, and see how many you can remember:

Garlic, pickles, sweet corn, tortillas, butter, potatoes, cardamom, sour cream, olives, chicken, sponges, cereal.

How many did you remember?

Now do the same thing with the following list:

Breakfast (omelettes): Eggs, milk, cheese

Lunch (sandwiches): Bread, ham, lettuce, tomato, mayonnaise

Dinner (spaghetti): Tomato sauce, hamburger, parmesan.

How did you do this time? What accounts for the difference?



o Principle 7: Follow the Questions

Skilled thinkers ask good questions. They pay attention to what is questionable and learn to formulate the questions that provoke thinking. They also keep track of the questions that arise along the way. (This is where Principle 7 differs from Principle 1, "Know the Problem.") They respect these questions and follow where they lead.

"The important thing is to never stop questioning."

Albert Einstein

"You can tell whether a man is clever by his answers. You can tell whether a man is wise by his questions."

Naguib Mahfouz (Nobel Prize Winner)

The **Theseus Learning System** trains you to pay attention to the questions that arise during thinking—questions that usually remain unspoken but nevertheless animate and sustain the thought process. The **TLS** helps you make these questions explicit, so you can check that they are indeed the right ones.

How Thought Trees Develop Key Habits of Mind

In the lessons that follow, you will learn how to diagram thought. More specifically, you will learn to build *thought trees*—diagrams that lay out the logical structure of a train of thought in a particularly transparent way. The beauty of this approach is that it compels you to apply *all seven* of the principles mentioned here. In other words, to build a well-formed thought tree, you need to

- Know the problem
- Break the problem down
- Focus attention where it's needed
- Monitor your thinking
- Picture thought
- Organize your points
- Follow the questions



Building a thought tree is a great way to make headway on a tough thinking problem or writing assignment. You'll get an invigorating mental workout; you'll produce better work; and—over time—your thinking skills will grow immeasurably stronger!



concept

check

See if you can name all seven principles without looking at this Lesson Book.

In the next lesson, you'll start learning how to use your TLS software to organize your ideas into "trees" like this one.