This section entails diagrams which can help you:

1. make connections between the critical thinking concepts discussed in this book.
2. better understand the relationship between critical thinking and teaching and learning, and
3. see the relevance of critical thinking to all subjects, disciplines and domains of human life.
The Elements of Thought

Elements of Thought

- **Point of View**
  - frame of reference, perspective, orientation, world view

- **Purpose**
  - goal, objective, function

- **Question at Issue**
  - problem, issue

- **Information**
  - data, facts, evidence, observations, experiences, reasons

- **Interpretation and Inference**
  - conclusions, solutions

- **Consequences**
  - that which follows logically, effects

- **Assumptions**
  - presuppositions, axioms, taking for granted

- **Concepts**
  - theories, definitions, laws, principles, models

**Used With Sensitivity to Universal Intellectual Standards**

- Clarity → Accuracy → Depth → Breadth → Significance
- Precision
- Relevance

*Taken from “The Thinker's Guide to Critical Thinking Concepts and Tools”, page 3*
To Analyze Thinking We Must Identify and Question its Elemental Structures

1. Whenever we think we think for a purpose
2. Within a point of view
3. Based on assumptions
4. Leading to implications and consequences
5. We use data, facts, and experiences
6. To make inferences and judgements
7. Based on concepts and theories
8. To answer a question or solve a problem

What is the key question I am trying to answer?
What is my fundamental purpose?
What are the implications of my reasoning (if I am correct)?
What assumptions am I using in my reasoning?
What are my most fundamental inferences or conclusions?
What information do I need to answer my question?
What is the most basic concept in the question?

Universal Structures of Thought

Taken from "The Thinker’s Guide to Analytic Thinking", page 7
Questions for Socratic Dialogue

Questions of Clarification
• What do you mean by _____?
• What is your main point?
• How does _____ relate to _____?
• Could you put that another way?
• What do you think is the main issue here?
• Is your basic point _____ or _____?
• Could you give me an example?
• Would this be an example: _____?
• Could you explain that further?
• Would you say more about that?
• Why do you say that?
• Let me see if I understand you; do you mean _____ or _____?
• How does this relate to our discussion/problem/issue?
• What do you think John meant by his remark? What did you take John to mean?
• Jane, would you summarize in your own words what Richard has said? Richard, is that what you meant?

Questions that Probe Purpose
• What is the purpose of _____?
• What was your purpose when you said _____?
• How do the purposes of these two people vary?
• How do the purposes of these two groups vary?
• What is the purpose of the main character in this story?
• How did the purpose of this character change during the story?
• Was this purpose justifiable?
• What is the purpose of addressing this question at this time?

Questions that Probe Assumptions
• What are you assuming?
• What is Karen assuming?
• What could we assume instead?
• You seem to be assuming ____. Do I understand you correctly?
• All of your reasoning depends on the idea that ____. Why have you based your reasoning on ____ rather than _____?
• You seem to be assuming ____. How would you justify taking this for granted?
• Is it always the case? Why do you think the assumption holds here?

Questions that Probe Information, Reasons, Evidence, and Causes
• What would be an example?
• How do you know?
• What are your reasons for saying that?
• Why did you say that?
• What other information do we need to know before we can address this question?
• Why do you think that is true?
• Could you explain your reasons to us?
• What led you to that belief?
• Is this good evidence for believing that?
• Do you have any evidence to support your assertion?
• Are those reasons adequate?
• How does that information apply to this case?
• Is there reason to doubt that evidence?
• What difference does that make?
• Who is in a position to know if that is the case?
• What would convince you otherwise?
• What would you say to someone who said _____?
• What accounts for _____?
• What do you think is the cause?
• How did this come about?
• By what reasoning did you come to that conclusion?
• How could we go about finding out whether that is true?
• Can someone else give evidence to support that response?

Continued on page 287

Taken from "The Thinker's Guide to The Art of Socratic Questioning", pages 20-23
Questions for Socratic Dialogue, cont.

Questions About Viewpoints or Perspectives
- You seem to be approaching this issue from ____ perspective. Why have you chosen this rather than that perspective?
- How would other groups/types of people respond? Why? What would influence them?
- How could you answer the objection that ____ would make?
- Can/did anyone see this another way?
- What would someone who disagrees say?
- What is an alternative?
- How are Ken’s and Roxanne’s ideas alike? Different?

Questions that Probe Implications and Consequences
- What are you implying by that?
- When you say ____ , are you implying ____?
- But if that happened, what else would also happen as a result? Why?
- What effect would that have?
- Would that necessarily happen or only probably happen?
- What is an alternative?
- If this and this are the case, then what else must be true?

Questions About the Question
- How can we find out?
- Is this the same issue as ____?
- How could someone settle this question?
- Can we break this question down at all?
- Is the question clear? Do we understand it?
- How would ____ put the issue?
- Is this question easy or difficult to answer? Why?
- What does this question assume?
- Would ____ put the question differently?
- Why is this question important?
- Does this question ask us to evaluate something?
- Do we need facts to answer this?

Questions that Probe Concepts
- What is the main idea we are dealing with?
- Why/how is this idea important?
- Do these two ideas conflict? If so, how?
- What was the main idea guiding the thinking of the character in this story?
- How is this idea guiding our thinking as we try to reason through this issue? Is this idea causing us problems?
- What main theories do we need to consider in figuring out ____?
- Are you using this term “ ____ ” in keeping with educated usage?
- What main distinctions should we draw in reasoning through this problem?
- What idea is this author using in her or his thinking? Is there a problem with it?

Questions that Probe Inferences and Interpretations
- What conclusions are we coming to about ____?
- On what information are we basing this conclusion?
- Is there a more logical inference we might make in this situation?
- How are you interpreting her behavior? Is there another possible interpretation?
- What do you think of ____?
- How did you reach that conclusion?
- Given all the facts, what is the best possible conclusion?
- How shall we interpret these data?
To Evaluate Thinking
We Must Apply Intellectual Standards
to the Elements of Thought

Understanding, the meaning can be grasped
Could you elaborate further? Could you give me an example? Could you illustrate what you mean?

Free from errors or distortions, true
How could we check on that? How could we find out if that is true? How could we verify or test that?

Exact to the necessary level of detail
Could you be more specific? Could you give me more details? Could you be more exact?

Relating to the matter at hand
How does that relate to the problem? How does that bear on the question? How does that help us with the issue?

Containing complexities and multiple interrelationships
What factors make this a difficult problem? What are some of the complexities of this question? What are some of the difficulties we need to deal with?

Encompassing multiple viewpoints
Do we need to look at this from another perspective? Do we need to consider another point of view? Do we need to look at this in other ways?

The parts make sense together, no contradictions
Does all this make sense together? Does your first paragraph fit in with your last? Does what you say follow from the evidence?

Focusing on the important, not trivial
Is this the most important problem to consider? Is this the central idea to focus on? Which of these facts are most important?

Justifiable, not self-serving or one-sided
Do I have any vested interest in this issue? Am I sympathetically representing the viewpoints of others?

Taken from “The Thinker’s Guide to Analytic Thinking”, pages 8-9
The Figuring Mind

There is a logic to figuring something out, to constructing a system of meanings which makes sense of something.

There are intellectual standards critical thinkers use to assess whether the logic in our mind mirrors the logic of the thing to be understood.

The Elements of Thought reveal the logic:

1. An object to be figured out
   - some data or information, some experience of it (the Empirical Dimension)
2. Some reason for wanting to figure it out
   - our Purpose or Goal
3. Some question or problem we want solved
   - our Question at Issue
4. Some initial sense of the object (whatever we take for granted)
   - our Assumptions
5. Some ideas by which we are making sense of the object
   - the Conceptual Dimension
6. Some drawing of conclusions about the object
   - our Inferences or interpretations
7. What follows from our interpretation of the object
   - the Implications and Consequences
8. Some viewpoint from which we conceptualize the object
   - our Point of View or Frame of Reference

Intellectual Standards include:
- Clarity
- Precision
- Relevance
- Accuracy
- Depth
- Breadth
- Logic
- Fairness

Taken from "The Thinker’s Guide to Analytic Thinking", page 22
Critical Thinkers Routinely Apply the Intellectual Standards to the Elements of Reasoning

The Standards

- Clarity: Precision
- Accuracy: Significance
- Relevance: Completeness
- Logicalness: Fairness
- Breadth: Depth

The Elements

- Purposes: Inferences
- Questions: Concepts
- Points of view: Implications
- Information: Assumptions

As we learn to develop

Intellectual Traits

- Intellectual Humility: Intellectual Perseverance
- Intellectual Autonomy: Confidence in Reason
- Intellectual Integrity: Intellectual Empathy
- Intellectual Courage: Fairmindedness

Taken from “The Miniature Guide to Critical Thinking Concepts and Tools,” page 19
Essential Intellectual Traits

Intellectual Humility .............................................................................................. vs Intellectual Arrogance

Having a consciousness of the limits of one’s knowledge, including a sensitivity to circumstances in which one’s native egocentrism is likely to function self-deceptively; sensitivity to bias, prejudice and limitations of one’s viewpoint. Intellectual humility depends on recognizing that one should not claim more than one actually knows. It does not imply spinelessness or subservience. It implies the lack of intellectual pretentiousness, boastfulness, or conceit, combined with insight into the logical foundations, or lack of such foundations, of one’s beliefs.

Intellectual Courage ................................................................................................ vs Intellectual Cowardice

Having a consciousness of the need to face and fairly address ideas, beliefs or viewpoints toward which we have strong negative emotions and to which we have not given a serious hearing. This courage is connected with the recognition that ideas considered dangerous or absurd are sometimes rationally justified (in whole or in part) and that conclusions and beliefs inculcated in us are sometimes false or misleading. To determine for ourselves which is which, we must not passively and uncritically “accept” what we have “learned.” Intellectual courage comes into play here, because inevitably we will come to see some truth in some ideas considered dangerous and absurd, and distortion or falsity in some ideas strongly held in our social group. We need courage to be true to our own thinking in such circumstances. The penalties for nonconformity can be severe.

Intellectual Empathy .............................................................................................. vs Intellectual Narrow-mindedness

Having a consciousness of the need to imaginatively put oneself in the place of others in order to genuinely understand them, which requires the consciousness of our egocentric tendency to identify truth with our immediate perceptions of long-standing thought or belief. This trait correlates with the ability to reconstruct accurately the viewpoints and reasoning of others and to reason from premises, assumptions, and ideas other than our own. This trait also correlates with the willingness to remember occasions when we were wrong in the past despite an intense conviction that we were right, and with the ability to imagine our being similarly deceived in a case-at-hand.

Intellectual Autonomy .............................................................................................. vs Intellectual Conformity

Having rational control of one’s beliefs, values, and inferences. The ideal of critical thinking is to learn to think for oneself, to gain command over one’s thought processes. It entails a commitment to analyzing and evaluating beliefs on the basis of reason and evidence, to question when it is rational to question, to believe when it is rational to believe, and to conform when it is rational to conform.

Intellectual Integrity .............................................................................................. vs Intellectual Hypocrisy

Recognition of the need to be true to one’s own thinking; to be consistent in the intellectual standards one applies; to hold one’s self to the same rigorous standards of evidence and proof to which one holds one’s antagonists; to practice what one advocates for others; and to honestly admit discrepancies and inconsistencies in one’s own thought and action.

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Essential Intellectual Traits, cont.

**Intellectual Perseverance** ................................................................. **vs Intellectual Laziness**

Having a consciousness of the need to use intellectual insights and truths in spite of difficulties, obstacles, and frustrations; firm adherence to rational principles despite the irrational opposition of others; a sense of the need to struggle with confusion and unsettled questions over an extended period of time to achieve deeper understanding or insight.

**Confidence In Reason** ................................................................. **vs Distrust of Reason and Evidence**

Confidence that, in the long run, one’s own higher interests and those of humankind at large will be best served by giving the freest play to reason, by encouraging people to come to their own conclusions by developing their own rational faculties; faith that, with proper encouragement and cultivation, people can learn to think for themselves, to form rational viewpoints, draw reasonable conclusions, think coherently and logically, persuade each other by reason and become reasonable persons, despite the deep-seated obstacles in the native character of the human mind and in society as we know it.

**Fairmindedness** ................................................................................. **vs Intellectual Unfairness**

Having a consciousness of the need to treat all viewpoints alike, without reference to one’s own feelings or vested interests, or the feelings or vested interests of one’s friends, community or nation; implies adherence to intellectual standards without reference to one’s own advantage or the advantage of one’s group.
Critical Thinking is Manifested in ALL Forms of Thought

Forms of Thought as Relevant to Critical Thinking Across the Disciplines
Three Forms of Criticality

**Uncriticality**

The Intellectually Naive

The mind wrongly experiences itself as rational and reasonable when, in fact, it is not.

Lacking critical thinking skills, the mind is easily manipulated by those more intellectually sophisticated.

The state of mind is that of complacency, arrogance and self delusion.

Intellectually Unskilled

**Sophistic Criticality**

The Intellectually Clever

The mind akin to that of ancient Greek teachers (sophists) who claimed they could persuade anyone of anything.

The arts of argumentation and manipulation in the pursuit of power, wealth and privilege.

The state of mind is that of orchestrated persuasion.

Intellectually Skilled but lacking Intellectual Traits

**Socratic Criticality**

The Intellectually Just

The mind disciplined to recognize the extent of its ignorance. Those who openmindedly seek the truth, even when it conflicts with their interests.

The art of reasoning within multiple, divergent points of view. Able to judge fairly those who disagree with them.

The state of mind is that of fair and objective analysis and evaluation of thought.

Intellectually Skilled while embodying Intellectual Traits
**Critical Thinking**

**Weak Sense**

- Partial
- Prejudiced
- One-sided
- Egocentric
- Sociocentric
- Intellectually Limited
- Parochial
- Selfish

**Strong Sense**

- Impartial
- Unprejudiced
- Multi-sided
- Empathic
- Non-Parochial
- Intellectually Unlimited
- Fairminded

**Weak Sense**

- Intellectual ability primarily in the service of one's selfish interest or advantage (or the interest and advantage of one's group, religion, culture, nation, gender, ...).

- A pronounced disposition to view events or phenomena as they relate to one's vested interest – and, thus, to judge things in the light of one's feelings, prejudices, opinions, or the like...

- and to do so in a clever, “effective” way – showing a high degree of practical intelligence and skill in contrivance – often mentally quick, cunning, shrewd; skilled in manipulating the unsophisticated and vulnerable.

**Strong Sense**

- Intellectual ability in the service of objective, dispassionate truth; ability and disposition to approach all views empathically, without vested interest or favoritism.

- A commitment to view events or phenomena as separate from one's self – and, thus, to be judged as they are, without reference to one's personal feelings, prejudices, opinions or the like...

- and to do so in ways that go beyond “finesse,” beyond clever argument, emotional appeals, beyond smooth, seductive and beguiling uses of language; committed to the fair treatment of all, especially the unsophisticated and vulnerable.
Critical Thinking, Content, and Student Thinking

Each Has Its Own Logic: Each Must Interconnect

The Logic of Critical Thinking

The Logic of Content

The Logic of Student Thinking
**Intellectual Discipline**

**Requires and Presupposes Intellectual Self-Command**

**Can Be Fostered in Teaching and Learning**

1. The ability to reason and understand the power of thought
   - logicalness
   - dependability
   - perseverance
   - systematicity
   - skillfulness
   - reasonability

2. The ability to use the intellect to deliberate and judge effectively.

3. To teach for intellectual discipline is to cultivate intellectual self-command.

4. You should design activities and assignments so that students use a robust framework of thought to analyze, assess and reconstruct some given manifestation of thought.

5. Students should come to see critical thinking as a higher order thought requiring self-command.

6. In critical thinking, not only do you reason, you also...
   - reason about your reason.

7. This requires a framework, a vocabulary for talking your way into the nature and forms of reason.

8. A framework for critical thinking should enable you to be explicit about your intellectual activity.

9. It should also enable you to reason about your reasoning in a systematic, Socratic, and comprehensive way.

10. This includes developing an ongoing personal narrative focused on cultivating intellectual self-command.
We can never become fairminded unless we learn how to enter sympathetically into the thinking of others, to reason from their perspective and eventually to try seeing things as they see them.