

Scenario

- Group activity
(2-4 participants, approx. 10 minutes)
- Think critically about the following scenario:

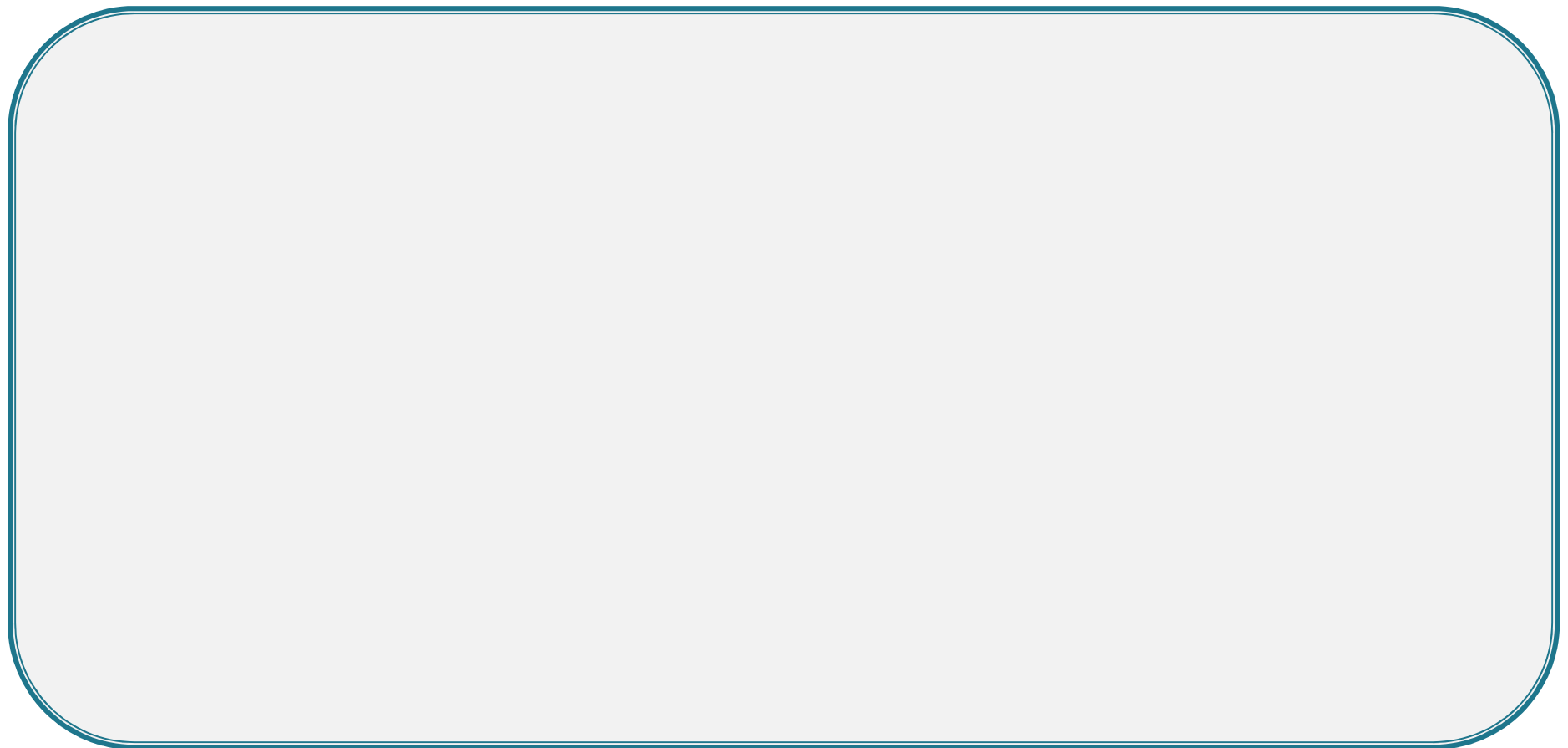
**Notice that water supply in the area has
been contaminated.**

Source: <http://people.eku.edu/chandrav/QEP/CriticalThinkingScenario-init.pdf>

Scenario -- Revisited

Seeking Better Ways of Doing Things

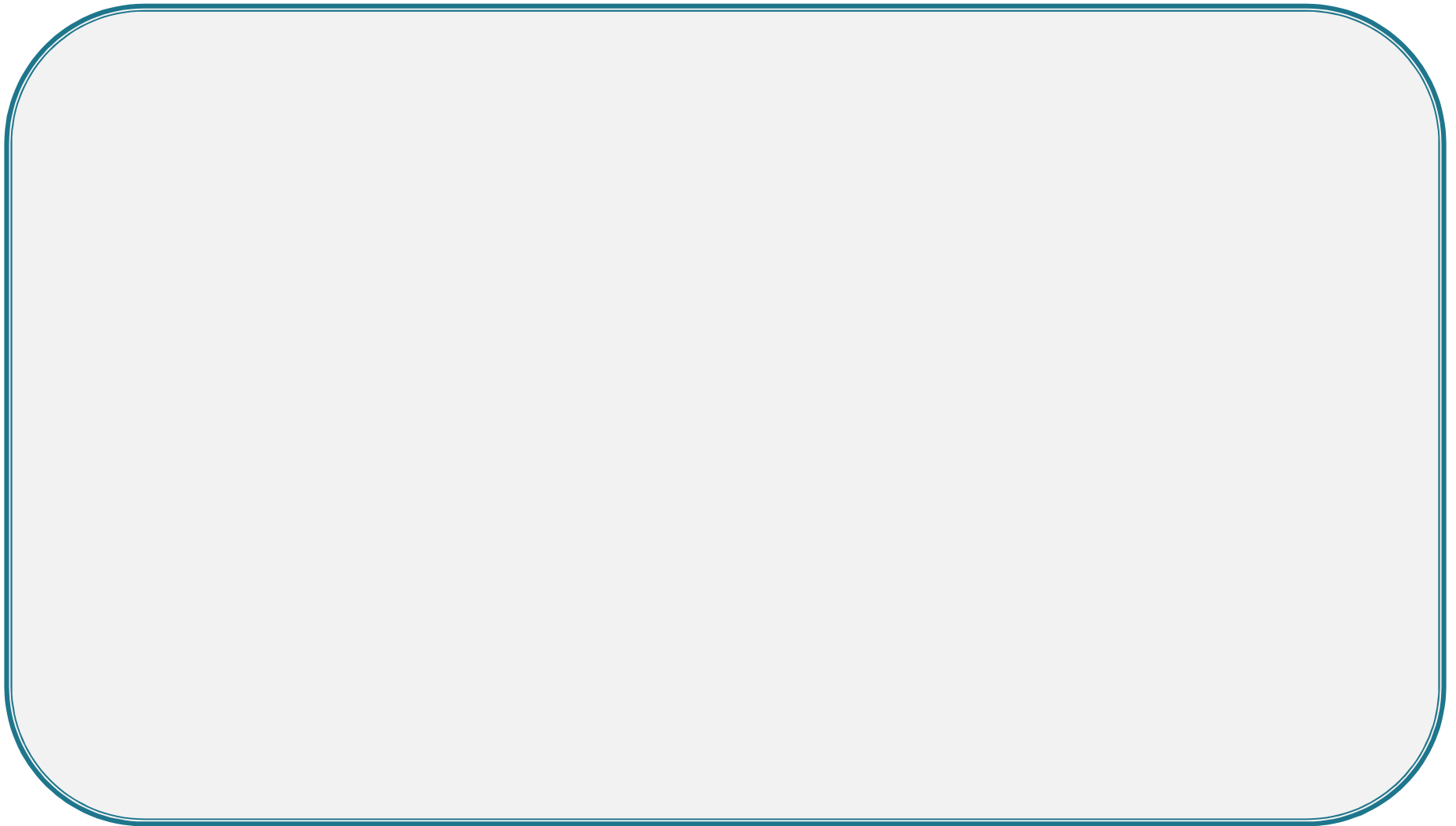
Group Activity (2-4 participants; approx. 10 minutes)



Source: <http://people.eku.edu/chandrav/QEP/CriticalThinkingScenario-structured.pdf>

Scenario -- Revisited

Seeking Better Ways of Doing Things



Critical Thinkers.....

- Formulate the problem clearly
- Work on significant problems or issues
- Examine their assumptions
- Use concepts and logic while solving problems
- Gather relevant information
- Consider multiple viewpoints and possible implications
- Reach reasonable solutions and conclusions

... Seek better ways of doing things and rely on intellectual standards (such as clarity, accuracy) for guiding their thinking

EKU's Definition of Critical Thinking

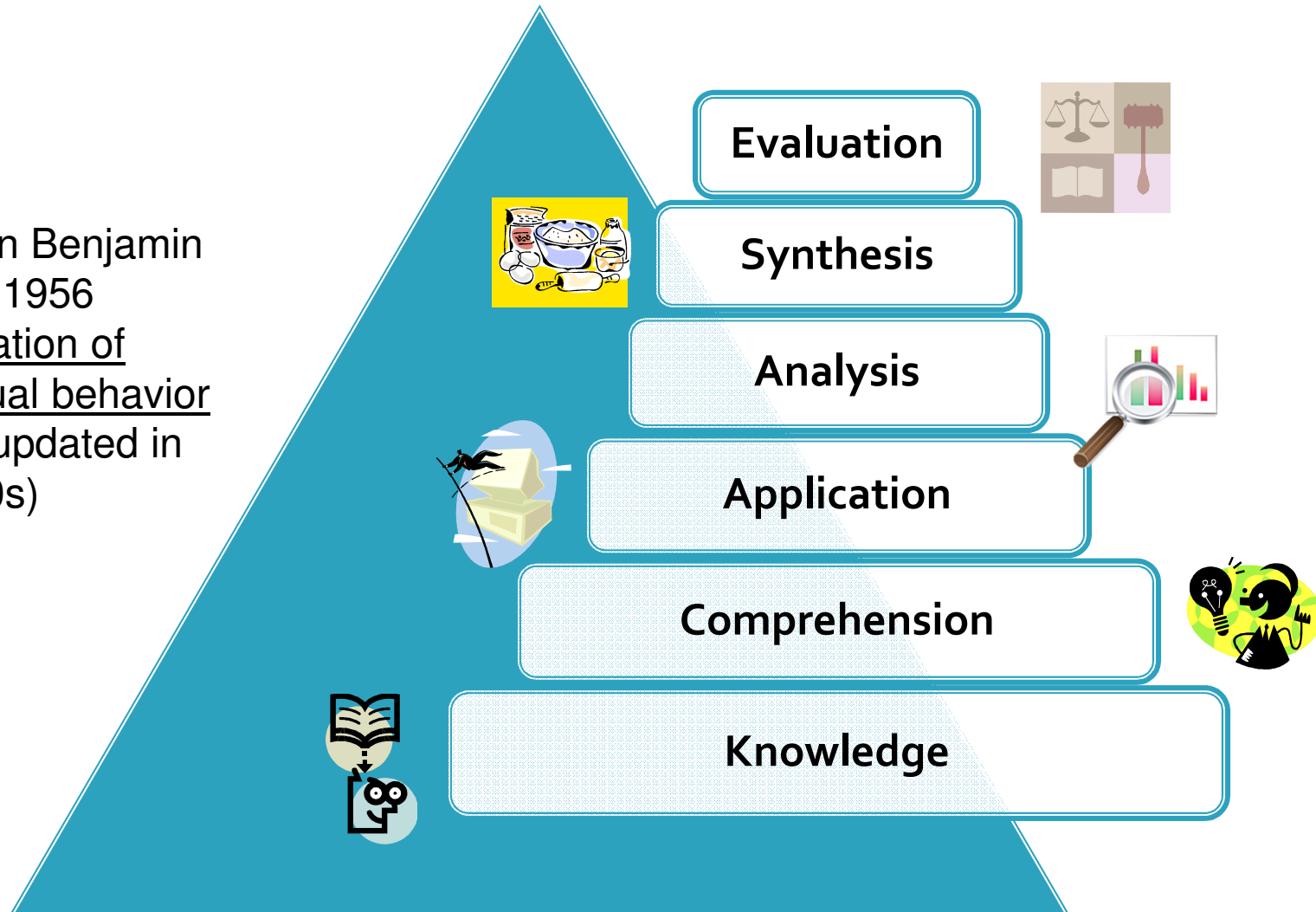
Critical and creative thinking are dynamic and deliberate processes where learners are active participants in intellectual activities in which they explore, evaluate, expand and express in relation to problems, scenarios, and arguments in order to reach sound and innovative solutions, decisions, and positions.

Explore, Evaluate, Expand, Express while Thinking Critically/Creatively

- **Explore** and use relevant *information* in order to gain knowledge and solve problems
- **Evaluate** *information and ideas* using appropriate methods
- **Expand** and generate their own *ideas* and express them effectively
- **Express** a *point of view* and develop it with awareness of alternatives

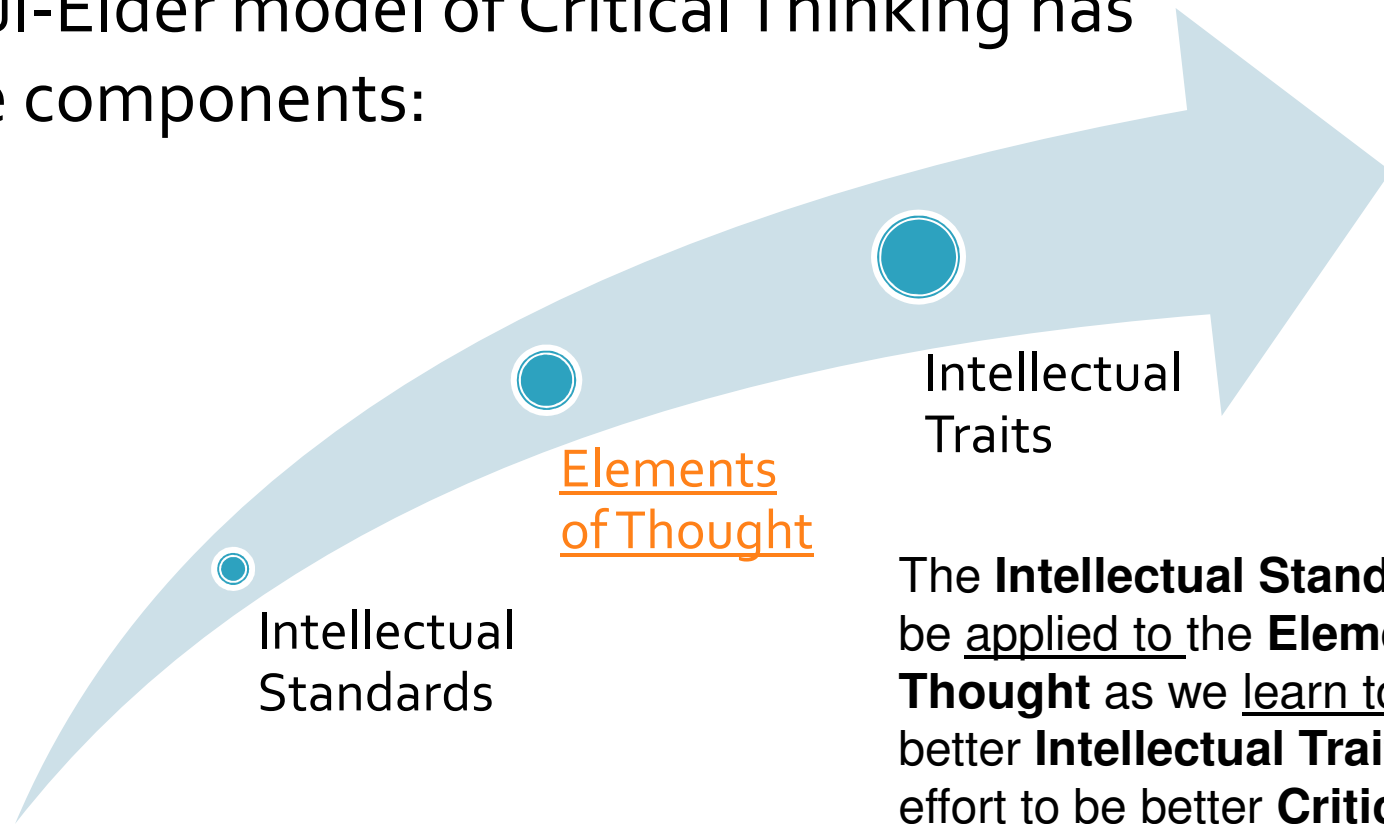
Critical Thinking in the Thinking Skills Pyramid

Based on Benjamin Bloom's 1956 classification of intellectual behavior (further updated in the 1990s)



Model of Critical Thinking Emphasized at EKU

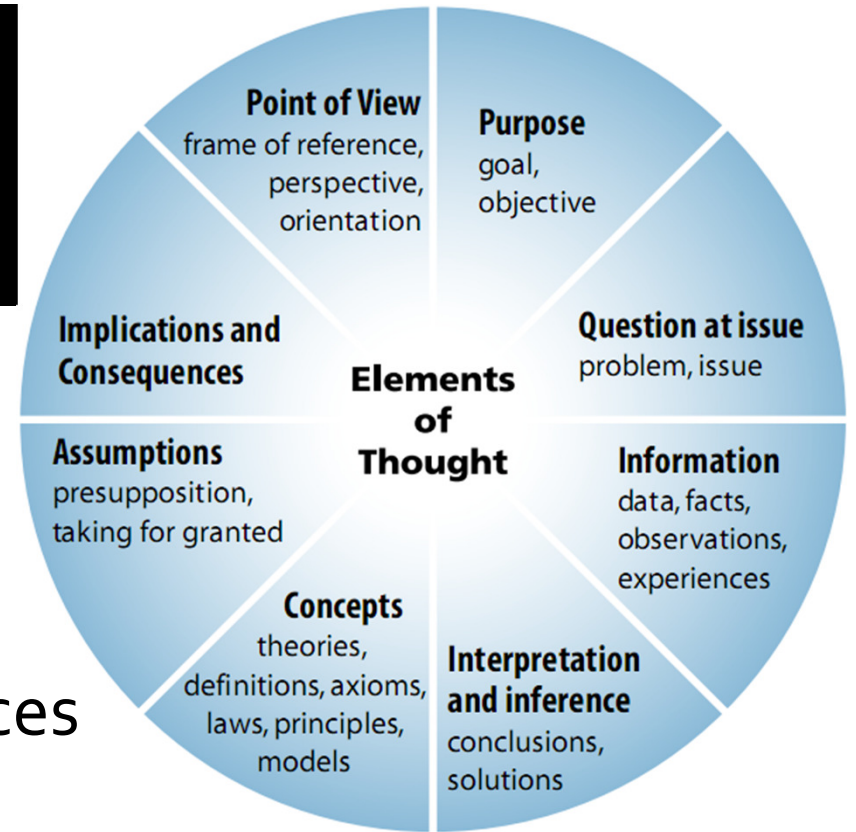
- Higher-order thinking used in all disciplines of study
- Paul-Elder model of Critical Thinking has Three components:



The **Intellectual Standards** can be applied to the **Elements of Thought** as we learn to develop better **Intellectual Traits** in an effort to be better **Critical and Creative Thinkers!**

Elements of Thought

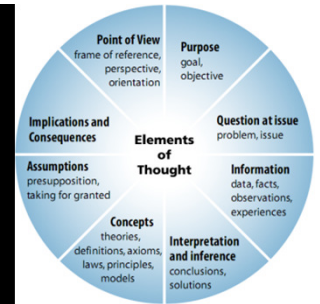
1. Purpose of the Thinking
2. Point of View
3. Assumptions
4. Implications and Consequences
5. Data, facts, and Experiences
6. Inferences and Judgments
7. Theories and Concepts
8. Answer a Question or Solve a Problem



Source: The Miniature Guide to Critical Thinking: Concepts and Tools, by Drs. R. Paul and L. Elder

Apply the Elements of Thought while analyzing reading and writing assignments, lab activities, or projects

Elements of Thought & Problem Solving



Formulate questions or problems

- Define/ express/ state the problem or issue
- Sub-issues
- Consider questions linked to issue

Purpose

- Goal
- A closer view
- Deeper or broader reason it should be solved?
- Consider personal or social stake in solving or tackling the issue

Point of view

- Perspectives
- Thinking hats
- Walk in somebody else's shoes
- Outsider's or non-specialist viewpoint
- Multiple views exist concurrently

Assumptions

- Background information
- What can we take for granted
- Initial conditions
- Reasonable assumption based on context
- Presupposition

Concepts

- Theories
- Definition
- Principles
- Models
- Axioms
- Theorems
- Rules
- Hypothesis
- Key words

Information

- Data
- Facts
- Observations
- Experiences
- Evidence
- Search for valid and external sources

Solutions

- Judgments
- Conclusions
- Interpretations
- Discussion
- Must follow from the information and concepts under the stated assumptions

Consequences

- If solved then what?
- If not solved then what?
- Implications
- Potential positive, negative, and unexpected future outcomes
- Directions for future work

Intellectual Standards

1. Clarity
2. Accuracy
3. Precision
4. Relevance
5. Depth
6. Breadth
7. Logic
8. Significance
9. Fairness

Clarity

Could you elaborate further?
Could you give me an example?
Could you illustrate what you mean?

Accuracy

How could we check on that?
How could we find out if that is true?
How could we verify or test that?

Precision

Could you be more specific?
Could you give me more details?
Could you be more exact?

Relevance

How does that relate to the problem?
How does that bear on the question?
How does that help us with the issue?

Depth

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?

Breadth

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?

Logic

Does all this make sense together?
Does your first paragraph fit in with your last?
Does what you say follow from the evidence?

Significance

Is this the most important problem to consider?
Is this the central idea to focus on?
Which of these facts are most important?

Fairness

Do I have any vested interest in this issue?
Am I sympathetically representing the viewpoints of others?

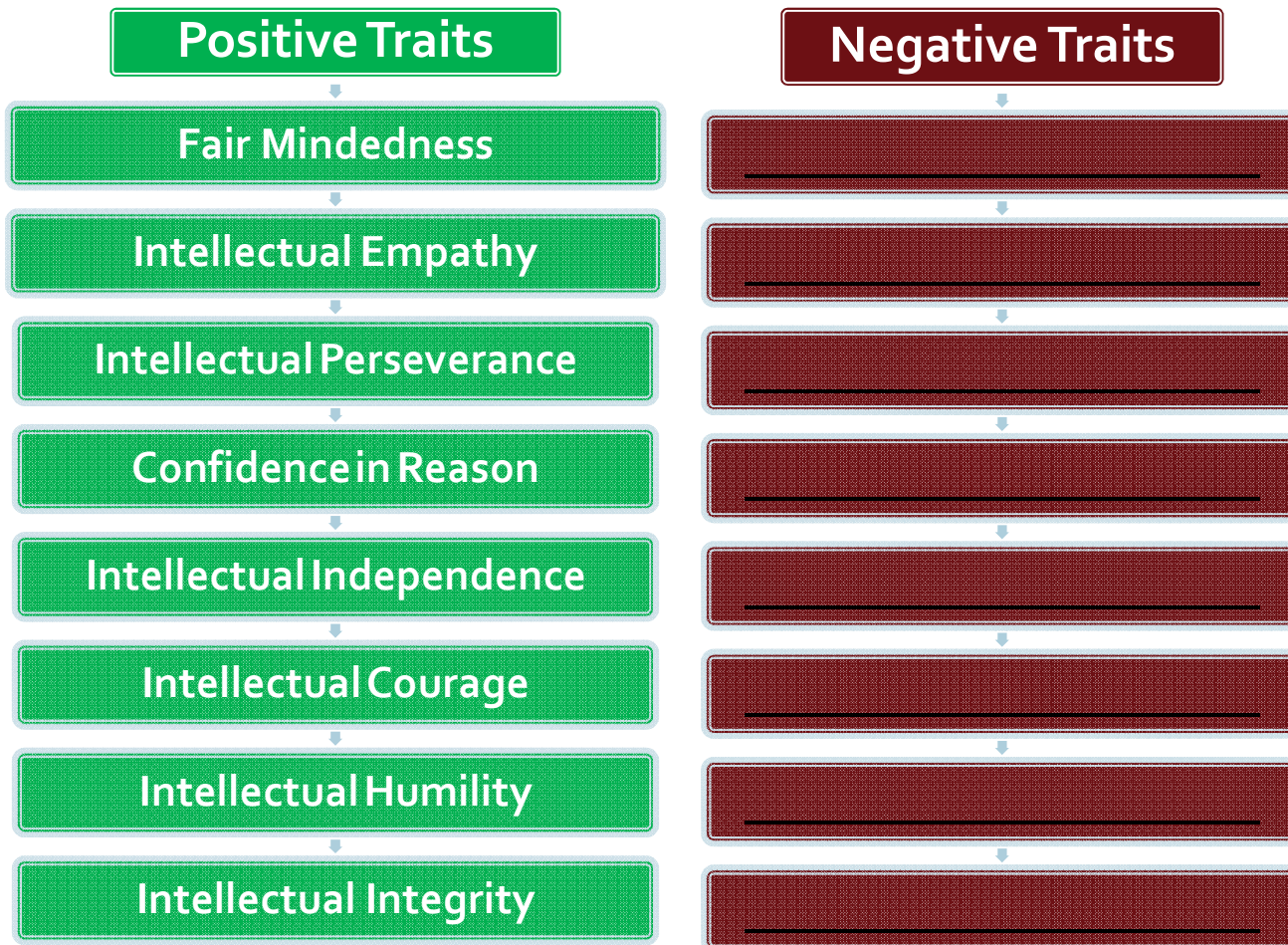
Critical Thinking & Standards



Source: DigitalSplashMedia's YouTube Video, <http://youtu.be/-85-j7Nr9i4>

Intellectual Traits

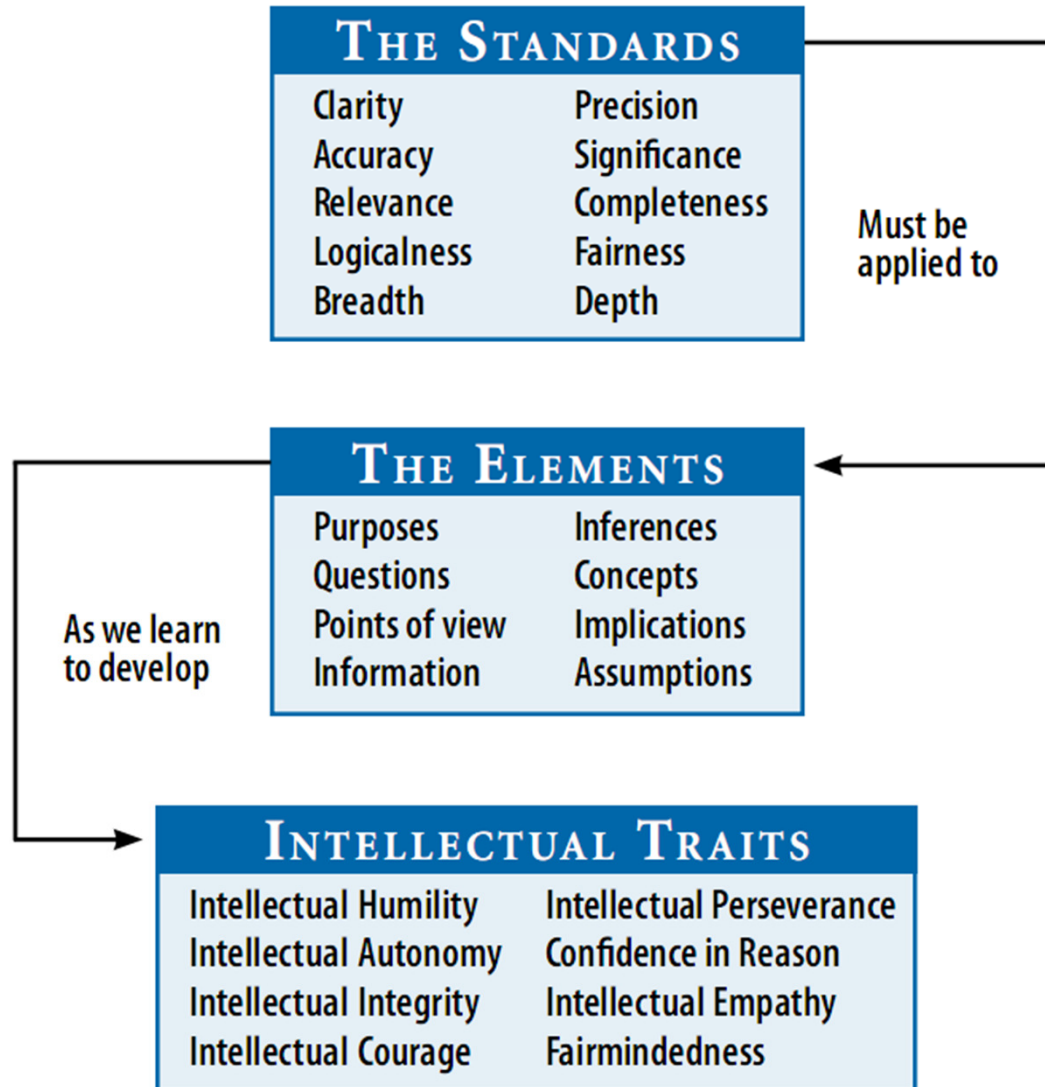
Consequences ...



As the branch is bent, the tree will grow?



Putting it all together ...



Source: The Miniature Guide to Critical Thinking: Concepts and Tools, by Drs. R. Paul and L. Elder

Tug-of-War

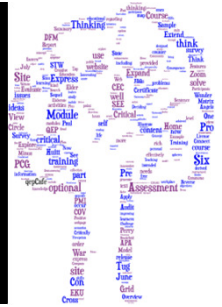


Use the Tug-of-War technique to Evaluate possible responses for:
“Notice that water supply in the area has been contaminated.”



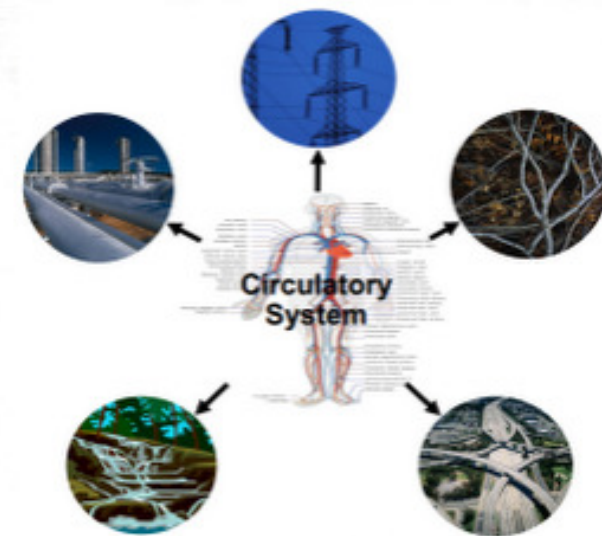
Identify and weigh the different thoughts, ideas, or information regarding to a dilemma

SEE-I



Use the **Compass Points** technique to Express some aspect of:
“Notice that water supply in the area has been contaminated.”

	Comment
S	State. Say or write about the thing (topic, idea, fact, concept, etc.) succinctly
E	Elaborate. Paraphrase, providing additional details, using a phrase such as "In other words ... "
E	Exemplify. Provide a specific instance or representative member of a larger class of things. Counter examples of the concept may be provided as well.
I	Illustrate. Draw, act, depict, sketch, provide a word-picture, simile (compare often using "like" or "as"), metaphor, analogy



Tabular representation of the State, Elaborate, Exemplify-Illustrate (SEE-I) technique

The “Five Minute University”

Father Guido Sarducci's Five Minute University
by messi19azzurtina



Source: messi19azzurtina's YouTube video, <http://www.youtube.com/watch?v=kO8x8eoU3L4>

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