

Critical Thinking in the Nursing and Allied Health Classroom

Before the workshop, we encourage you to

- Read the recommended readings noted below.
- Identify a course that you'd like to think about or work on.

Please bring to the workshop

- Materials that will help you think about or work on your course (e.g. a list of your program or course competencies, your syllabus, a learning activity, an assignment, an assessment tool, etc.).
- A laptop computer, if you have one.

Workshop

8:00 a.m. – 5:00 p.m., Thursday, August 31, 2017

8:00 a.m. Opening Discussion

- What are your experiences in the classroom?
- What would you like to get out of this workshop?

9:00 a.m. Critical Thinking

- What Critical Thinking is
- Why Critical Thinking can be Hard
- What makes Critical Thinking Easier
- *Recommended Reading*: Facione, P. (2015). "Critical Thinking What It Is and Why It Counts." from <http://www.insightassessment.com/Resources/Critical-Thinking-What-It-Is-and-Why-It-Counts>

9:50 a.m. Break

10:00 a.m. Visual Thinking

- Concept Maps
- Reasoning Maps
- *Recommended Reading*: Davies, M. (2011). "Concept mapping, mind mapping, and argument mapping: What are the differences and do they matter?" *Higher Education*, 62(3), 279-301.

11:00 a.m. Critical Thinking and Visual Thinking in the Health Sciences

- Nursing Process
- Barriers to Implementing Nursing Process
- Responses to Barriers
- *Recommended Reading*: Billings, D. and K. Kowalski (2008). "Argument Mapping." *Journal of Continuing Education in Nursing*: 246-247.

Noon Lunch

1:00 p.m. What this Means for You

- Learning Outcomes in your Classroom
- Assessment Tools in your Classroom
- Learning Activities in your Classroom
- *Recommended Reading*: McTighe, J. and G. Wiggins (2012). "Understanding by Design Framework." 2016, from http://www.ascd.org/ASCD/pdf/siteASCD/publications/UbD_WhitePaper0312.pdf.

2:00 p.m. Some Assembly Required

- Working on your courses.

4:00 p.m. Reporting Back

Critical Thinking in the Nursing and Allied Health Classroom

Vera Klekovkina, Wade Mahon, Jodi Olmsted, Dona Warren
The University of Wisconsin-Stevens Point

Opening Discussion

Critical Thinking

Visual Thinking

Critical Thinking and Visual Thinking in the Health Sciences

What this Means for You

Some Assembly Required

Opening Discussion

What are your experiences in the classroom?

What would you like to get out of this workshop?

Critical Thinking

What it is

Critical Thinking: "Purposeful, reflective judgment which manifests itself in reasoned consideration... in deciding what to believe or what to do." (Facione 2015)

Facione, Peter, 2015, "Title: Critical Thinking What It Is and Why It Counts,"
<http://www.insightassessment.com/Resources/Critical-Thinking-What-It-Is-and-Why-It-Counts>

Critical Thinking: "Purposeful, reflective judgment which manifests itself in reasoned consideration... in deciding what to believe or what to do." (Facione 2015)

Cognitive Processes

Applying
knowledge

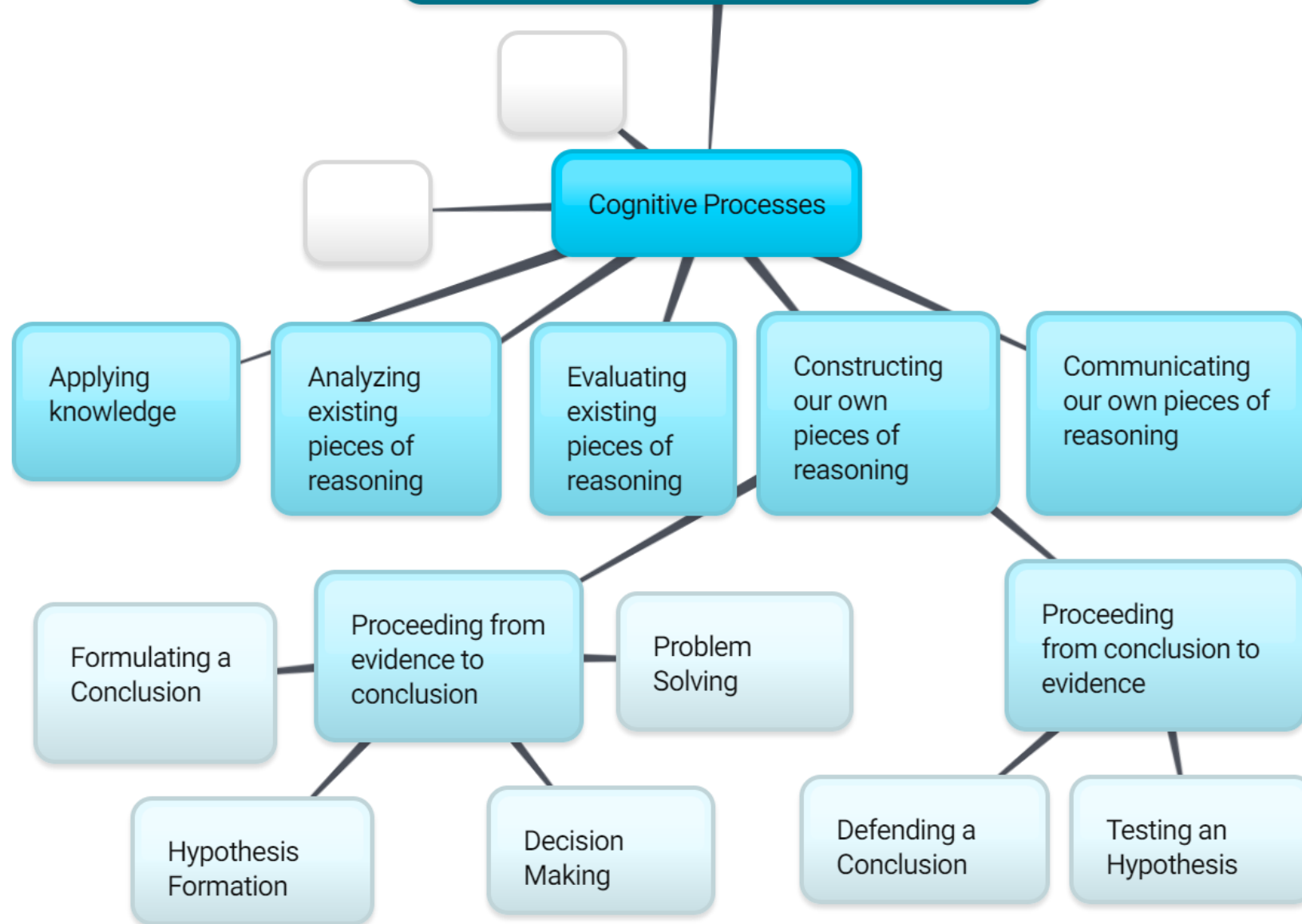
Analyzing
existing
pieces of
reasoning

Evaluating
existing
pieces of
reasoning

Constructing
our own
pieces of
reasoning

Communicating
our own pieces of
reasoning

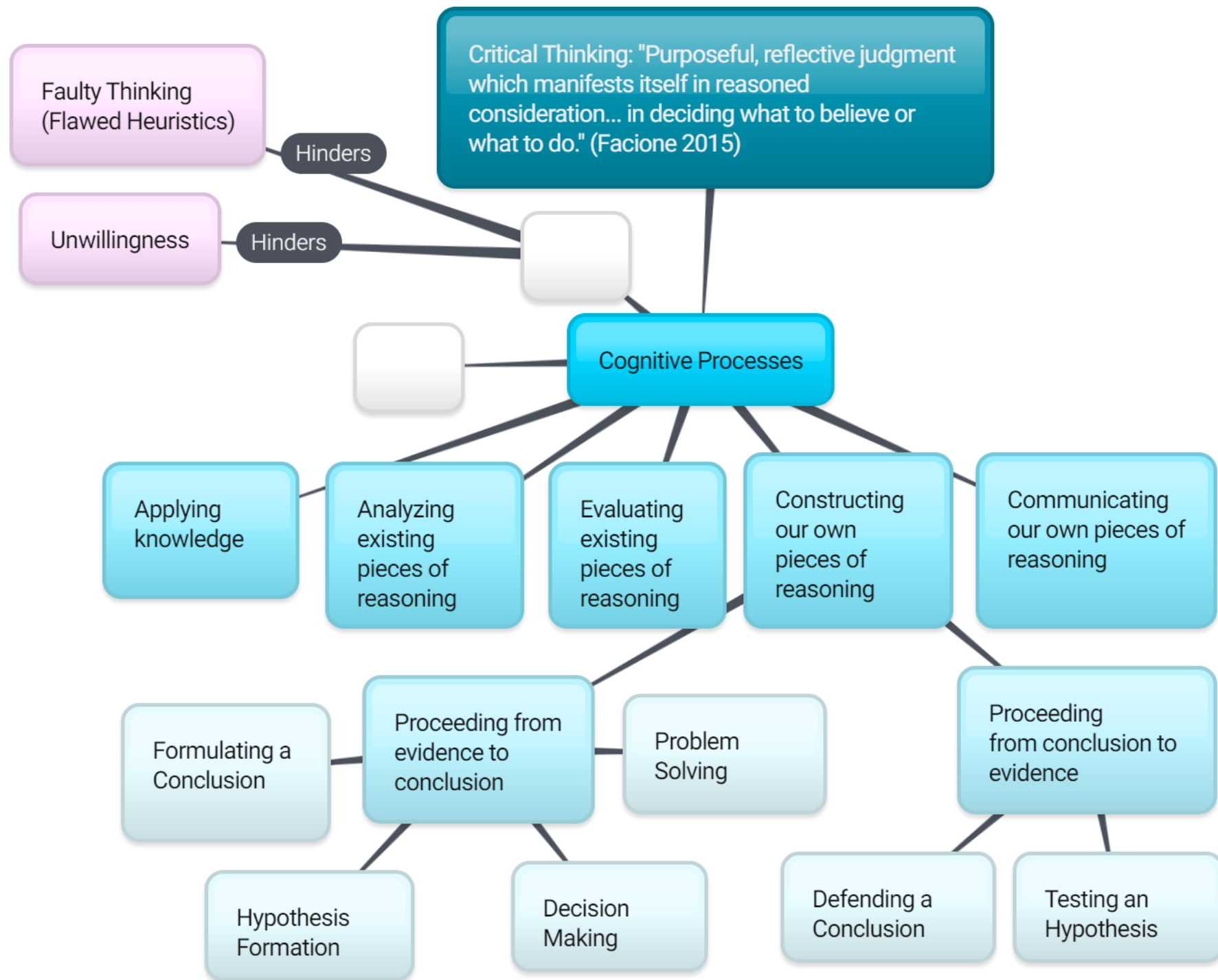
Critical Thinking: "Purposeful, reflective judgment which manifests itself in reasoned consideration... in deciding what to believe or what to do." (Facione 2015)

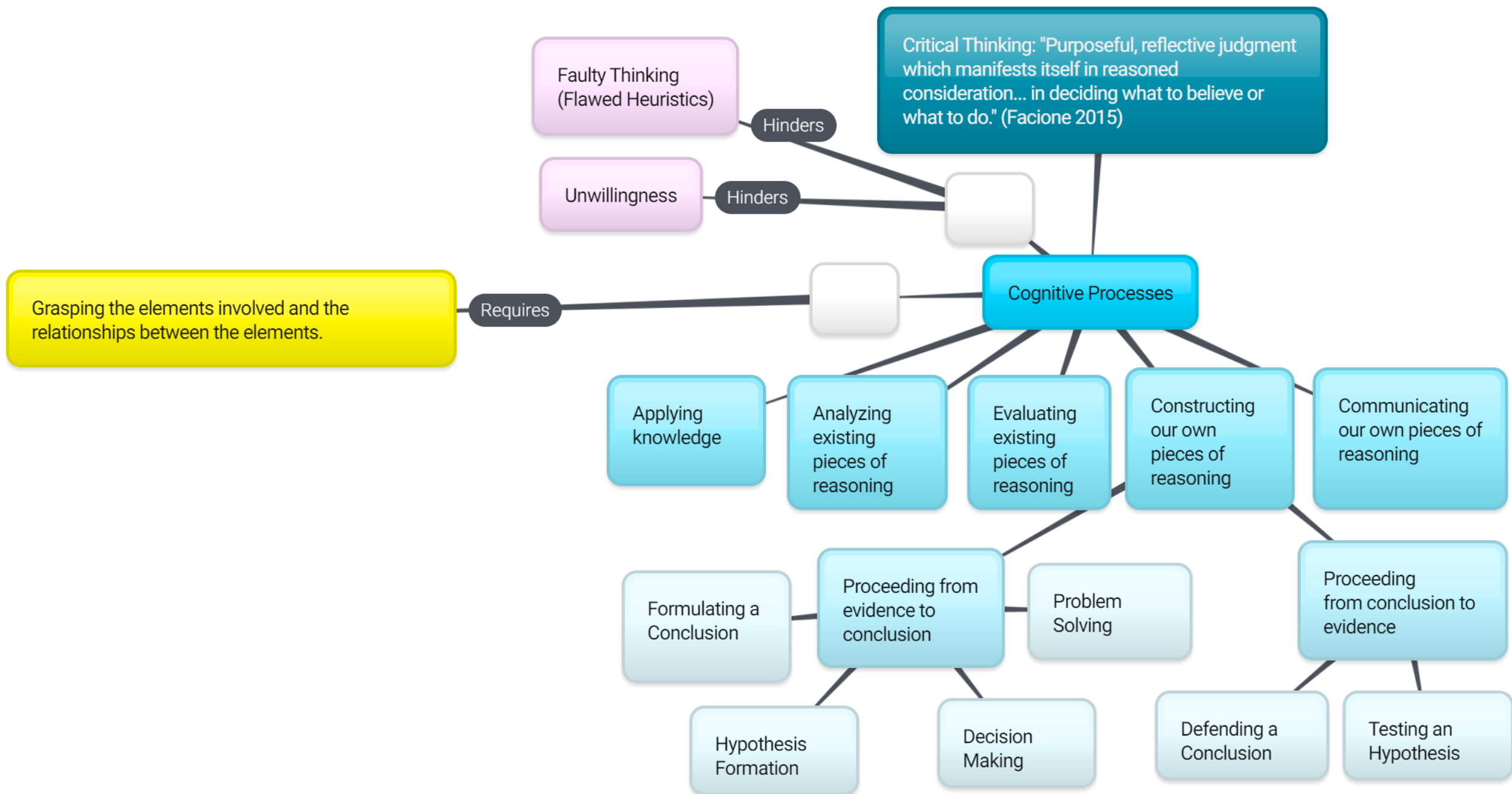


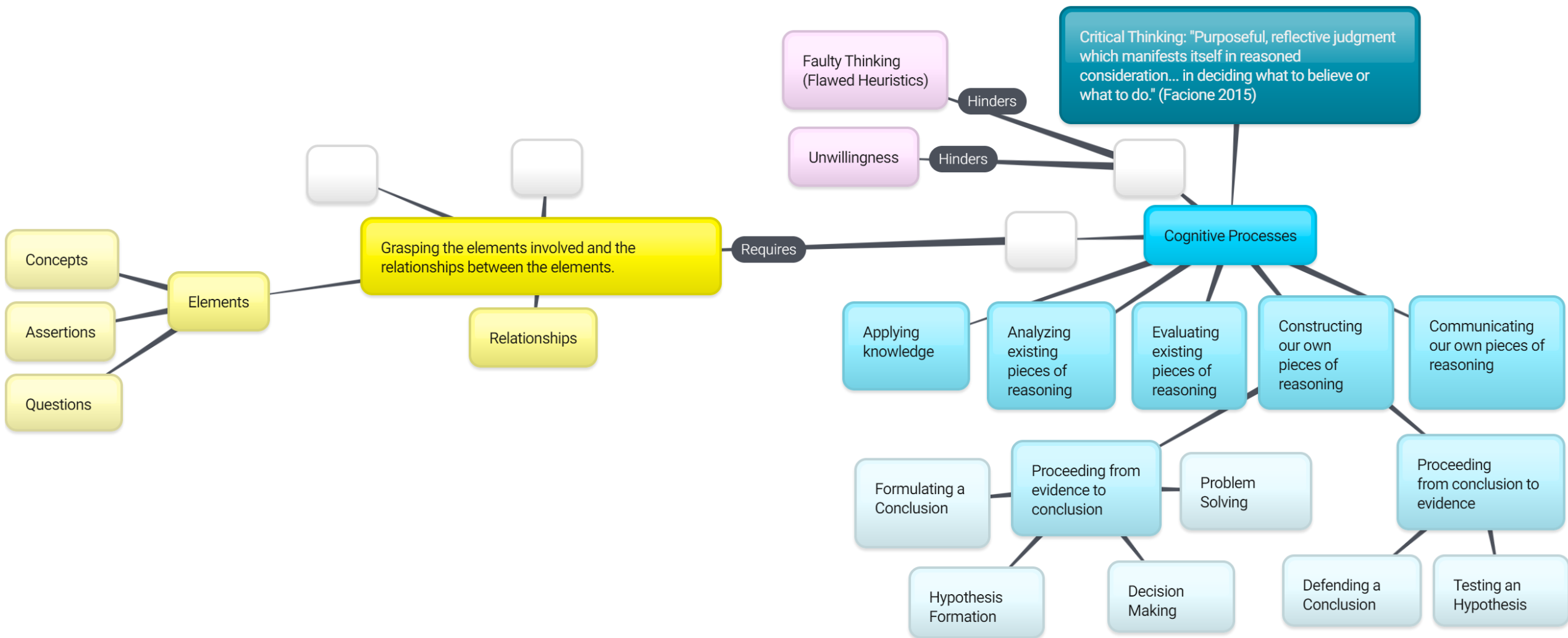
Critical Thinking

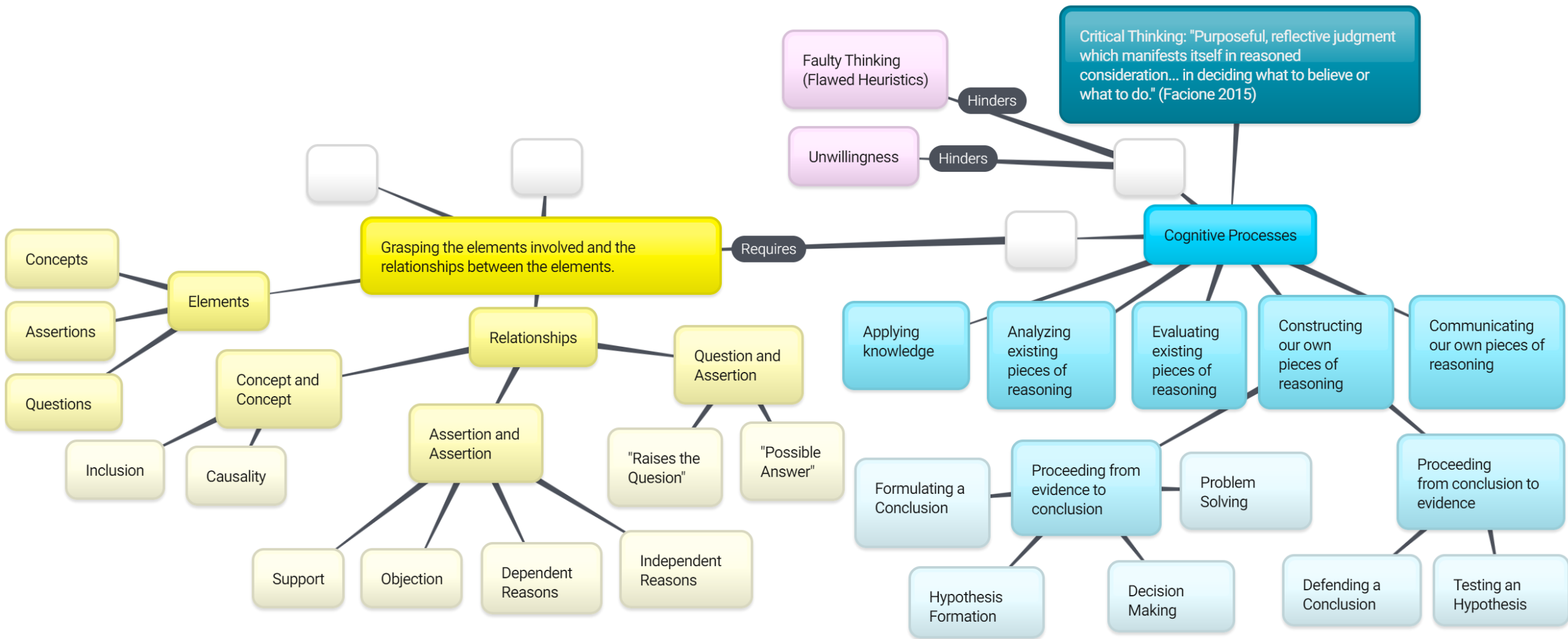
What it is

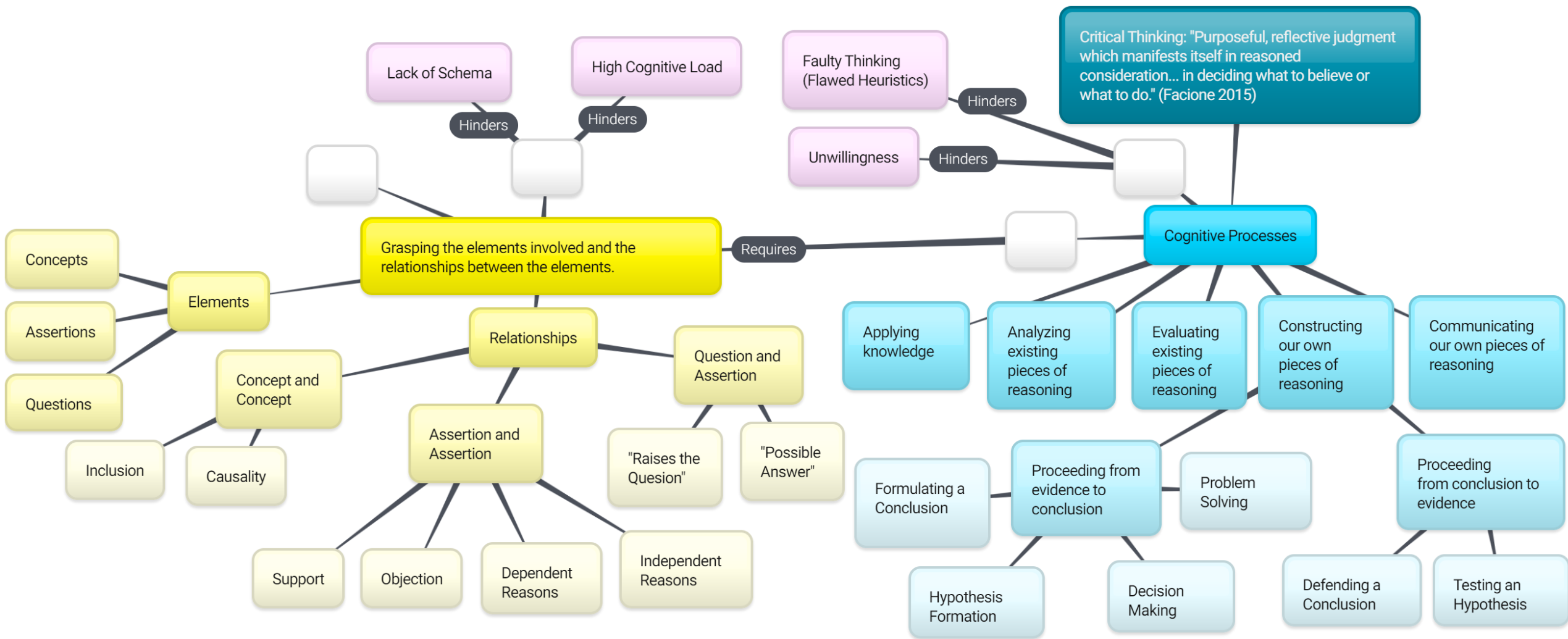
Why it can be hard









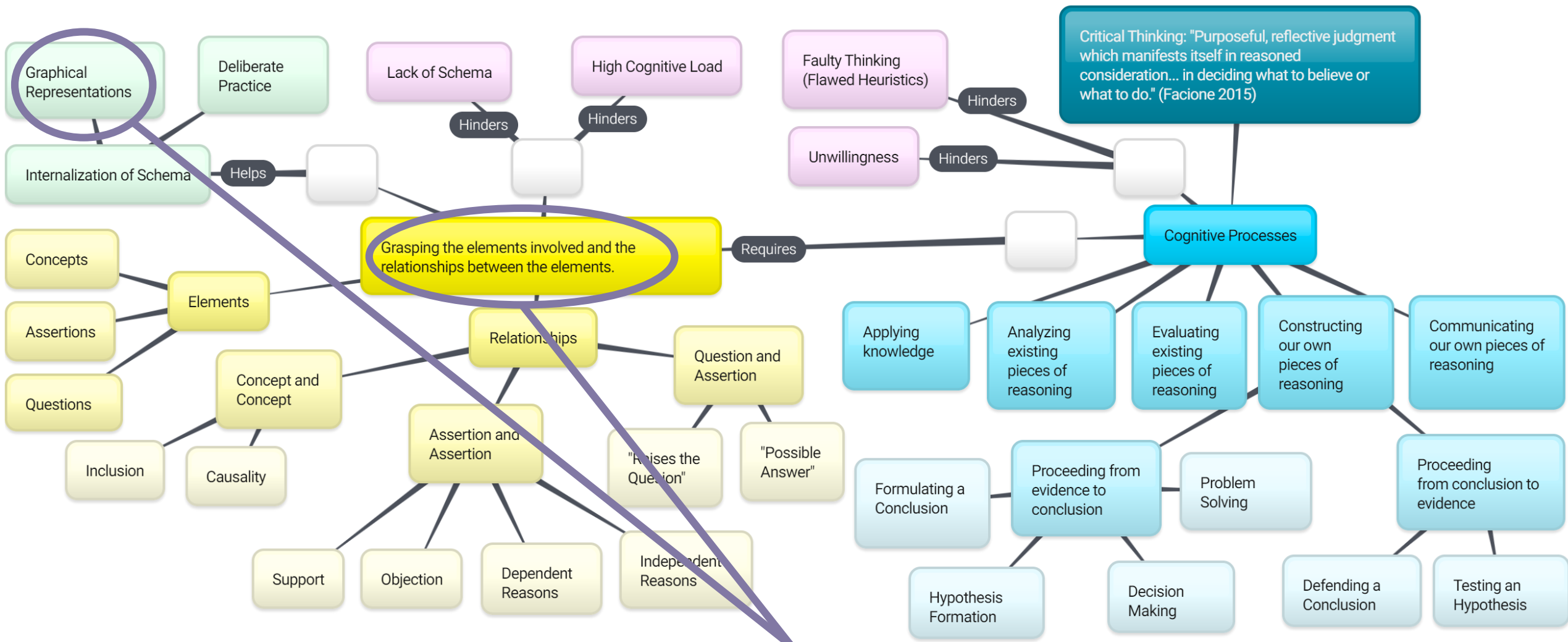


Critical Thinking

What it is

Why it can be hard

What can make it easier

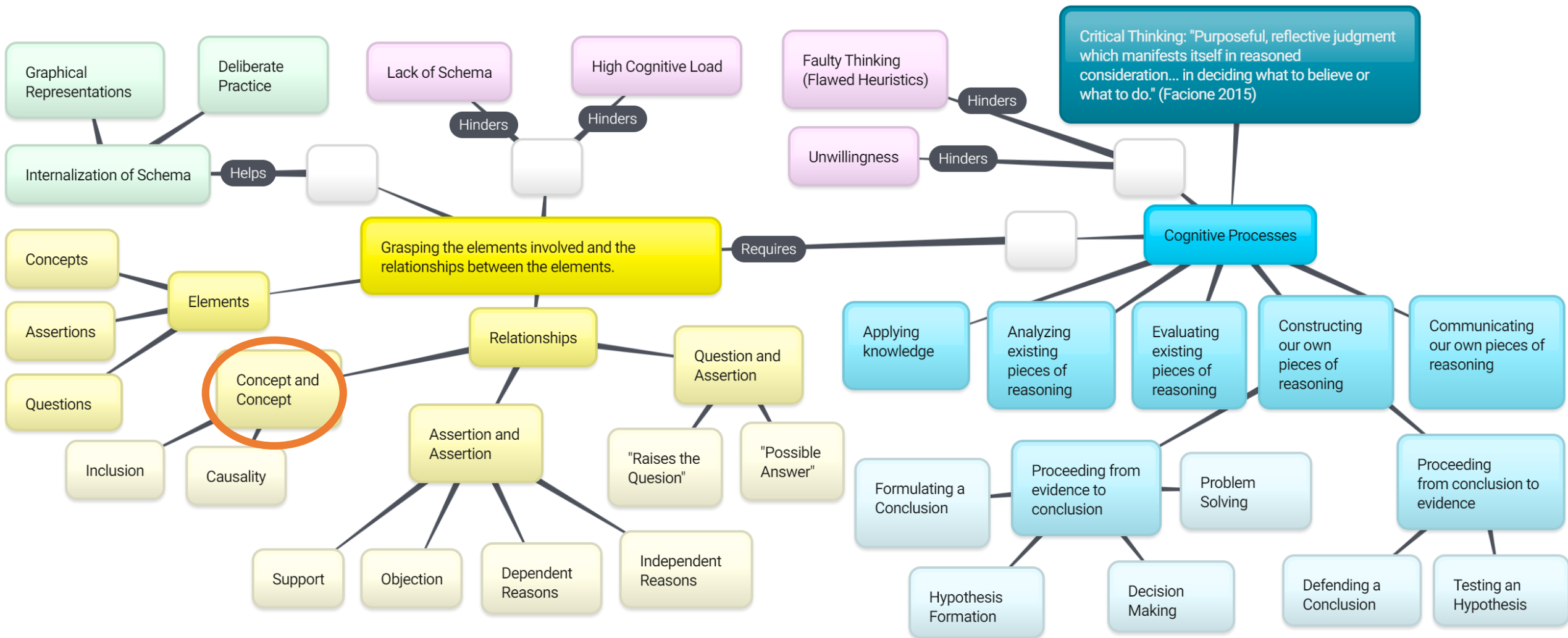


Graphical representations make

- the elements easier to see
- the relationships between the elements easier to track
- the reasoning easier to evaluate

Visual Thinking

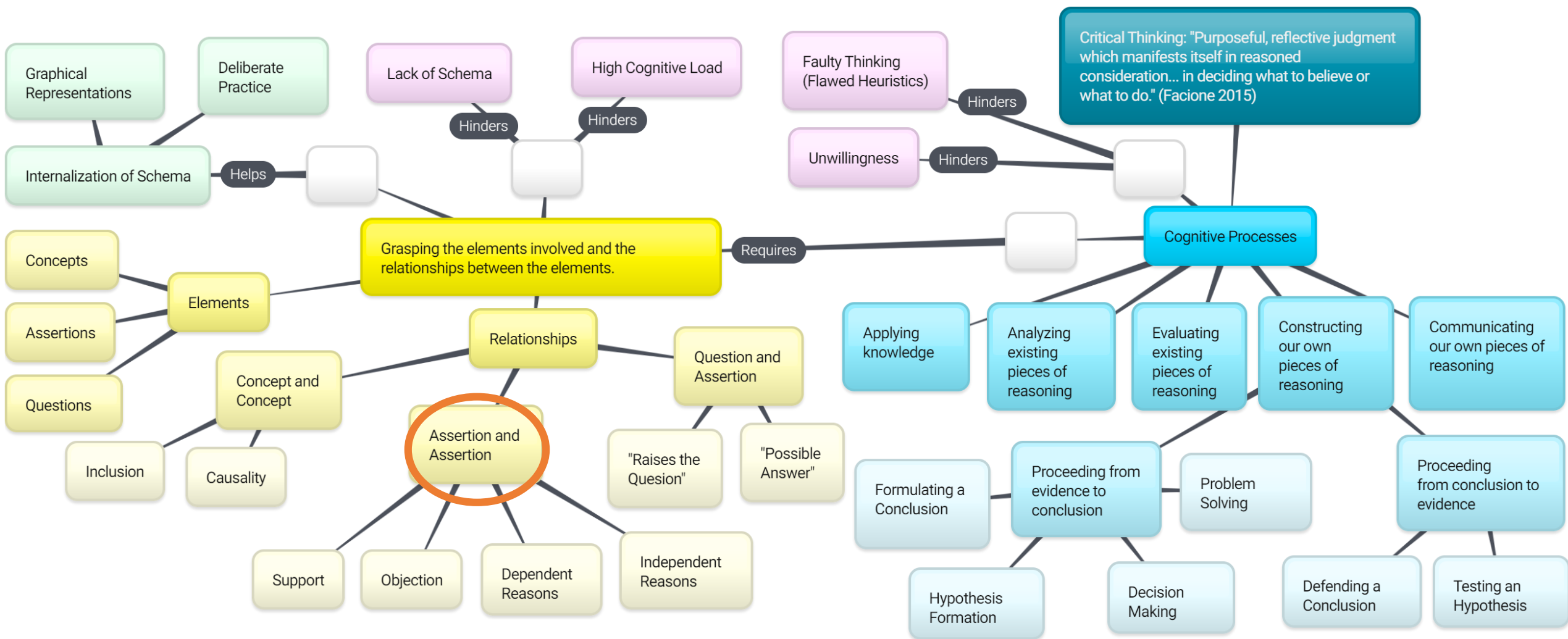
Concept Maps



Visual Thinking

Concept Maps

Argument Maps



“I think my house will sell within six months. After all, it’s on a river. Of course, lots of people are worried about flooding. My nasty neighbor thinks that my house is priced twice as high as comparable houses, but I think it’s priced reasonably, and reasonably priced houses always sell quickly. My husband claims that our house needs a new roof, and of course houses that need new roofs stay on the market longer, but as far as I can see, our roof is structurally sound.”



- What are the main elements (assertions) in this piece of reasoning, and how are they related to each other?
- Try to represent this argument visually.

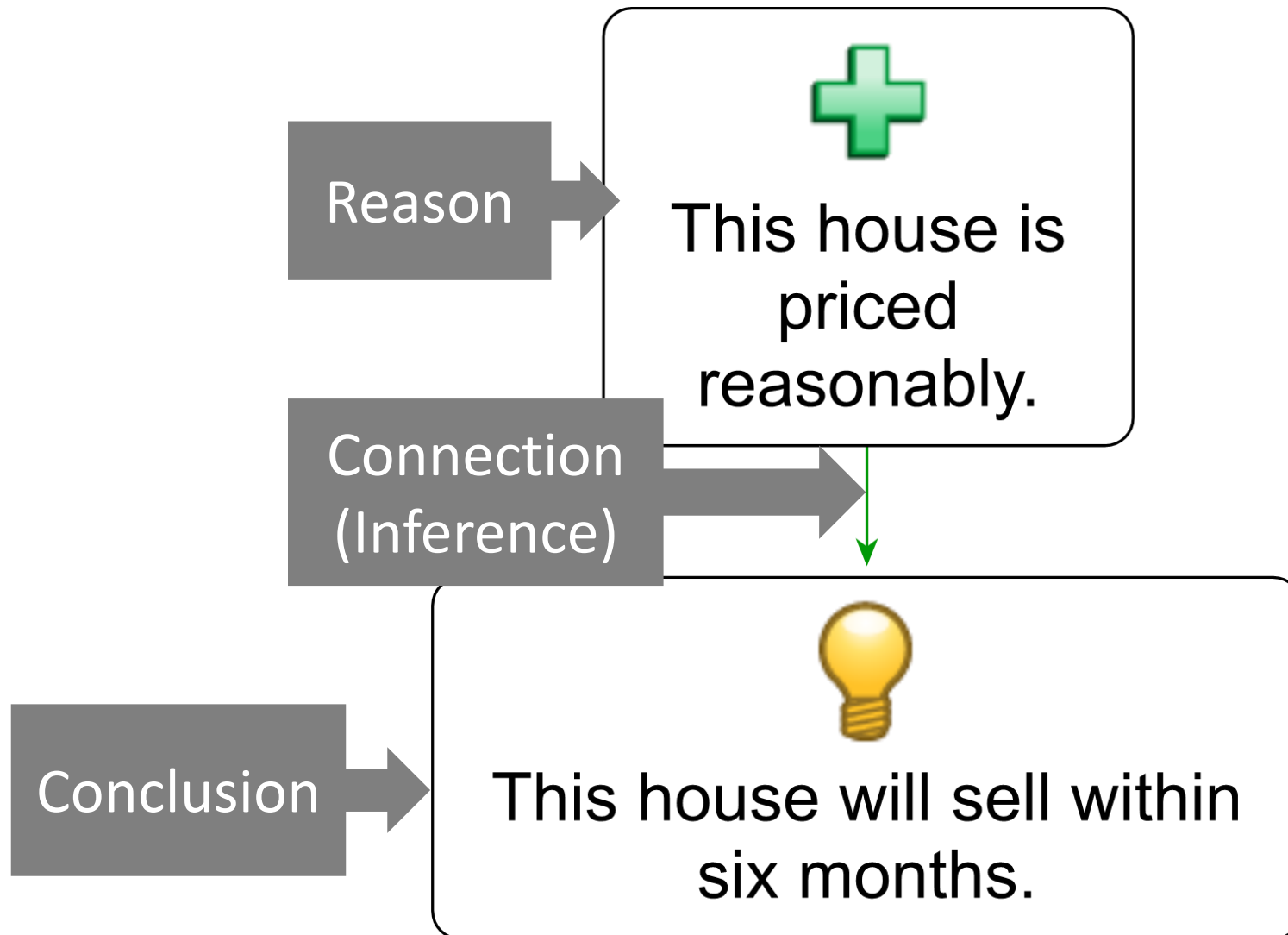
Visual Thinking

Concept Maps

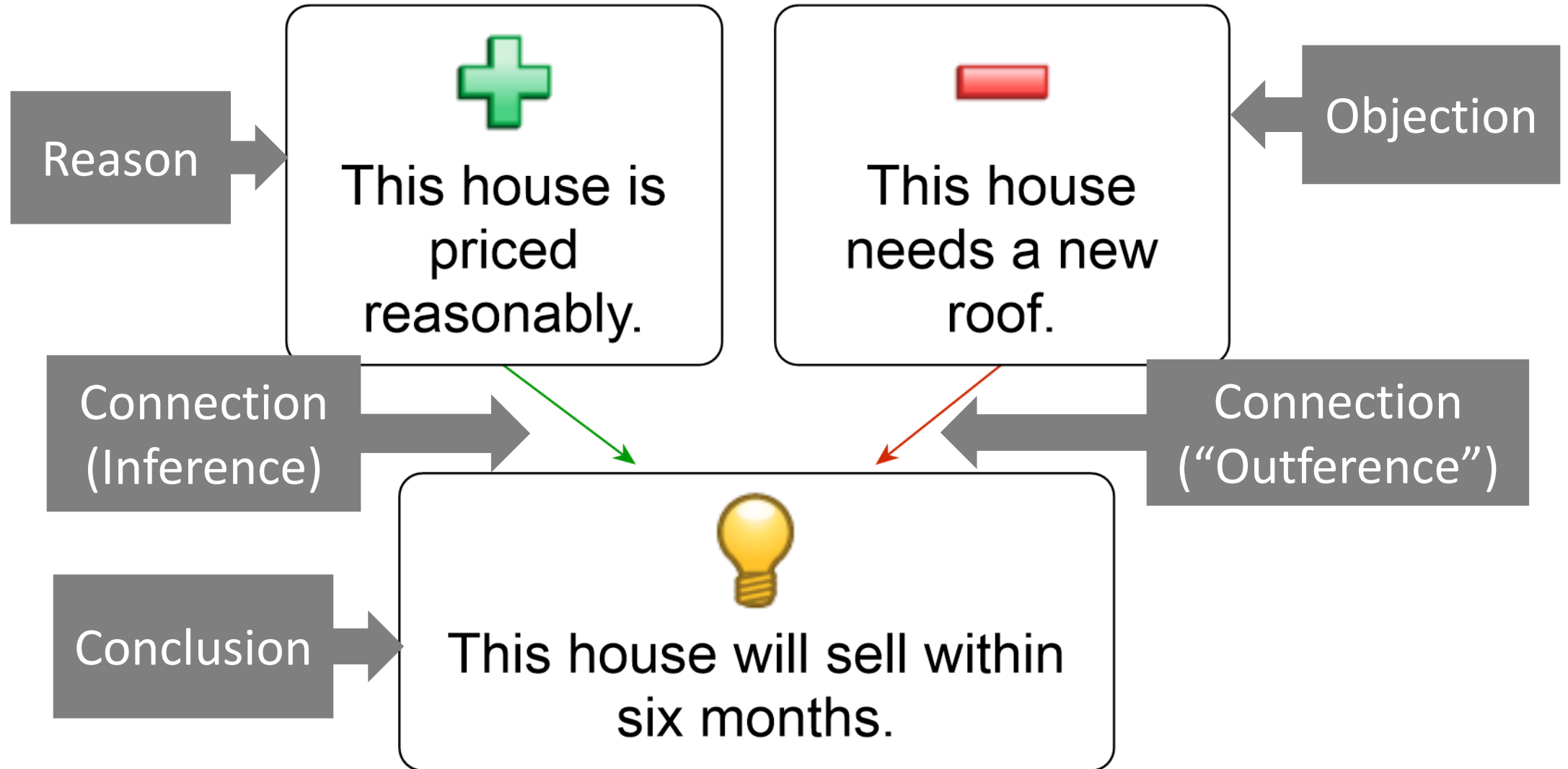
Argument Maps

Logical Structure of Reasoning

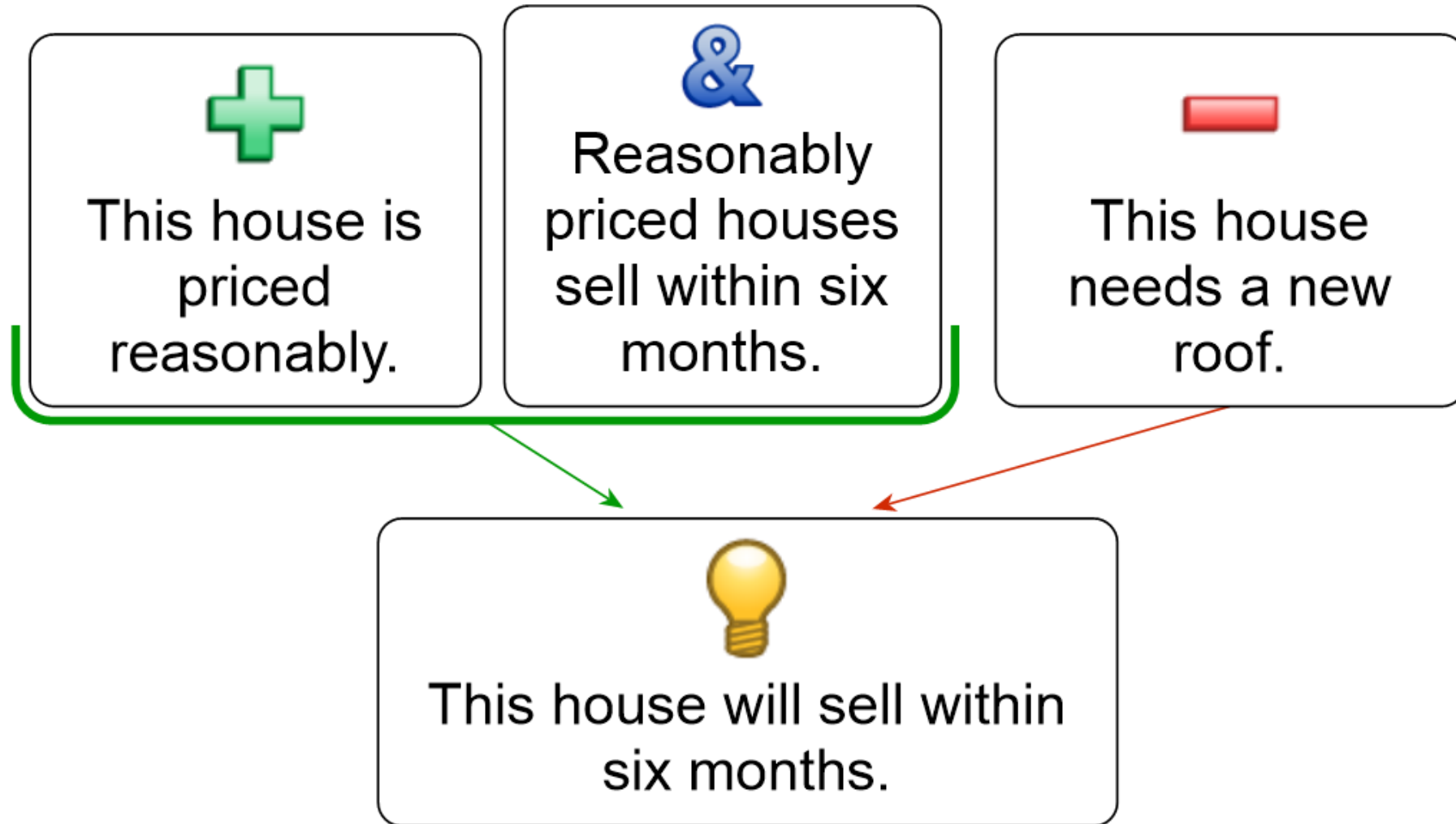
Support



Objection



Dependent Reasons



Dependent Reasons



This house is
priced
reasonably.



Reasonably
priced houses
sell within six
months.



This house
needs a new
roof.

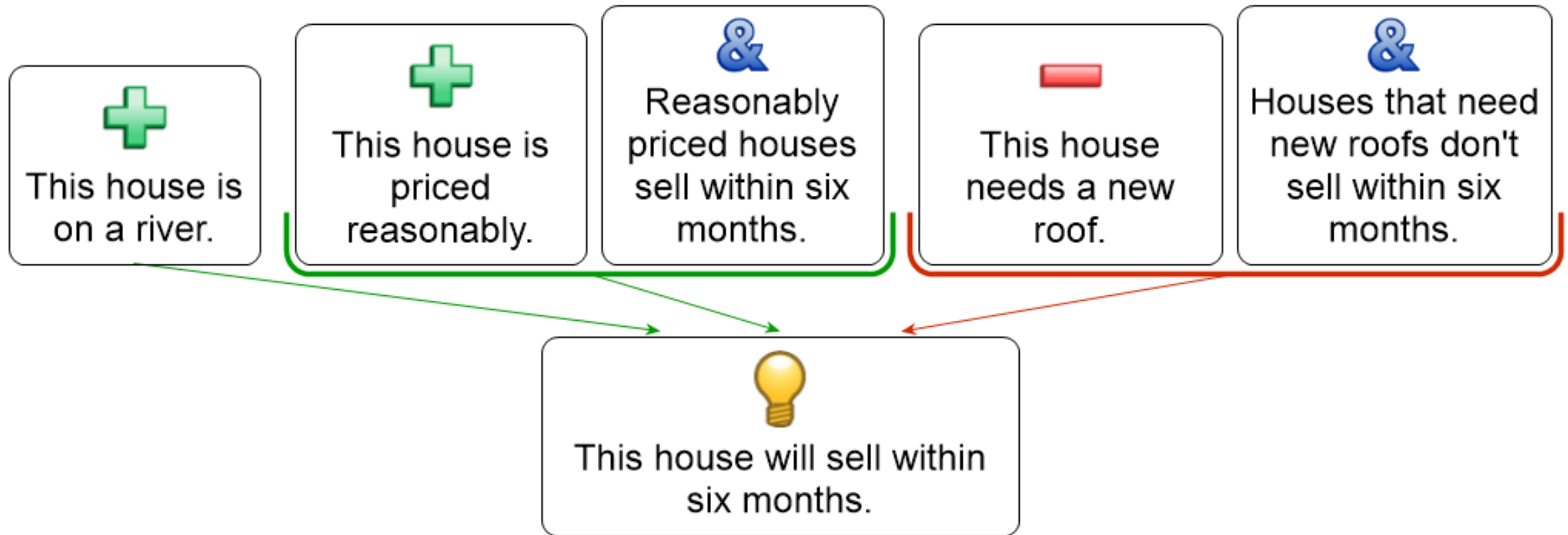


Houses that need
new roofs don't
sell within six
months.



This house will sell within
six months.

Independent Reasons



- The structure of the reasoning can be more complex.
- The content of the reasoning can be more difficult to comprehend.
- It can be difficult to track other people's reasoning.
- It can be difficult to track our own reasoning.



It's hard to find a black chicken in the dark.

But it's even harder if you don't know what a chicken looks like.

Visual Thinking

Concept Maps

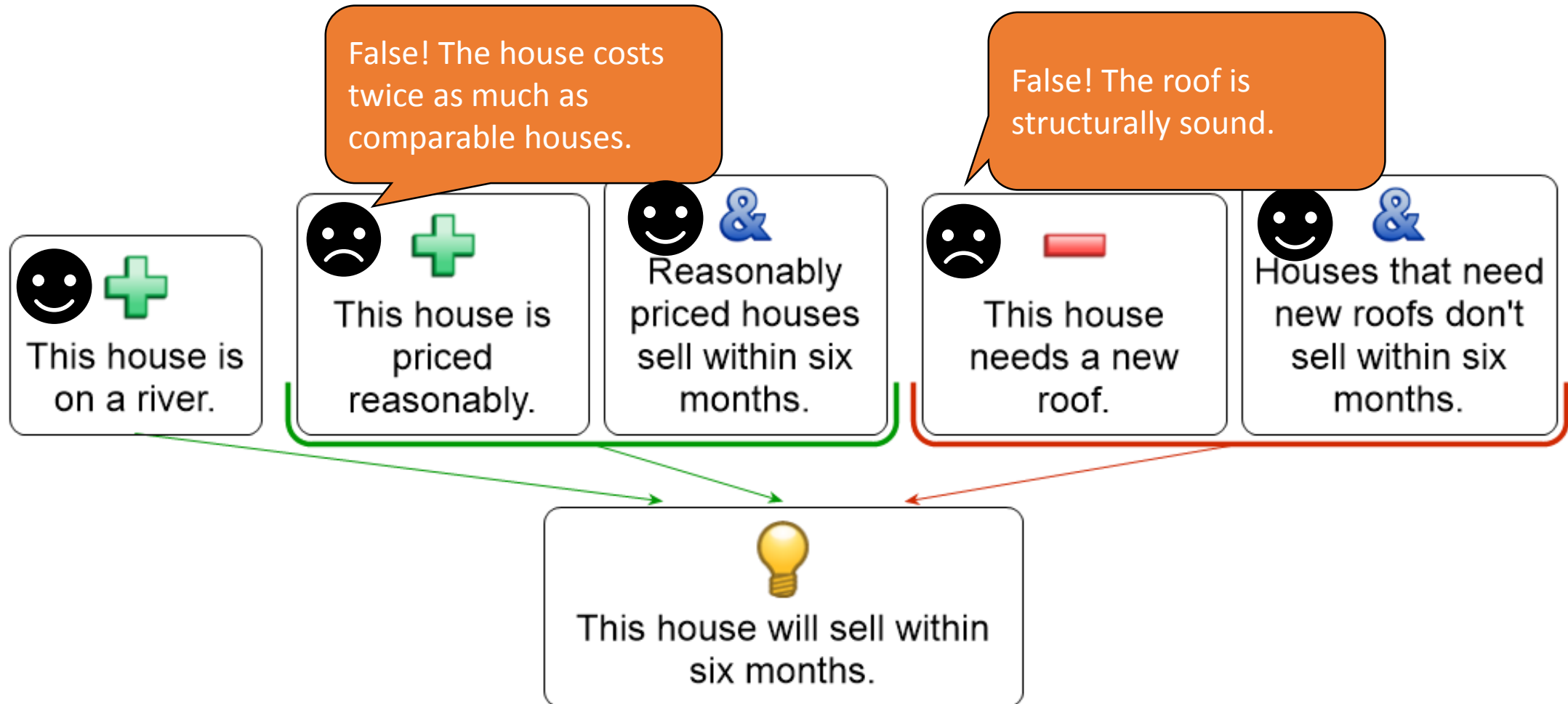
Argument Maps

Logical Structure of Reasoning

Evaluation of Reasoning

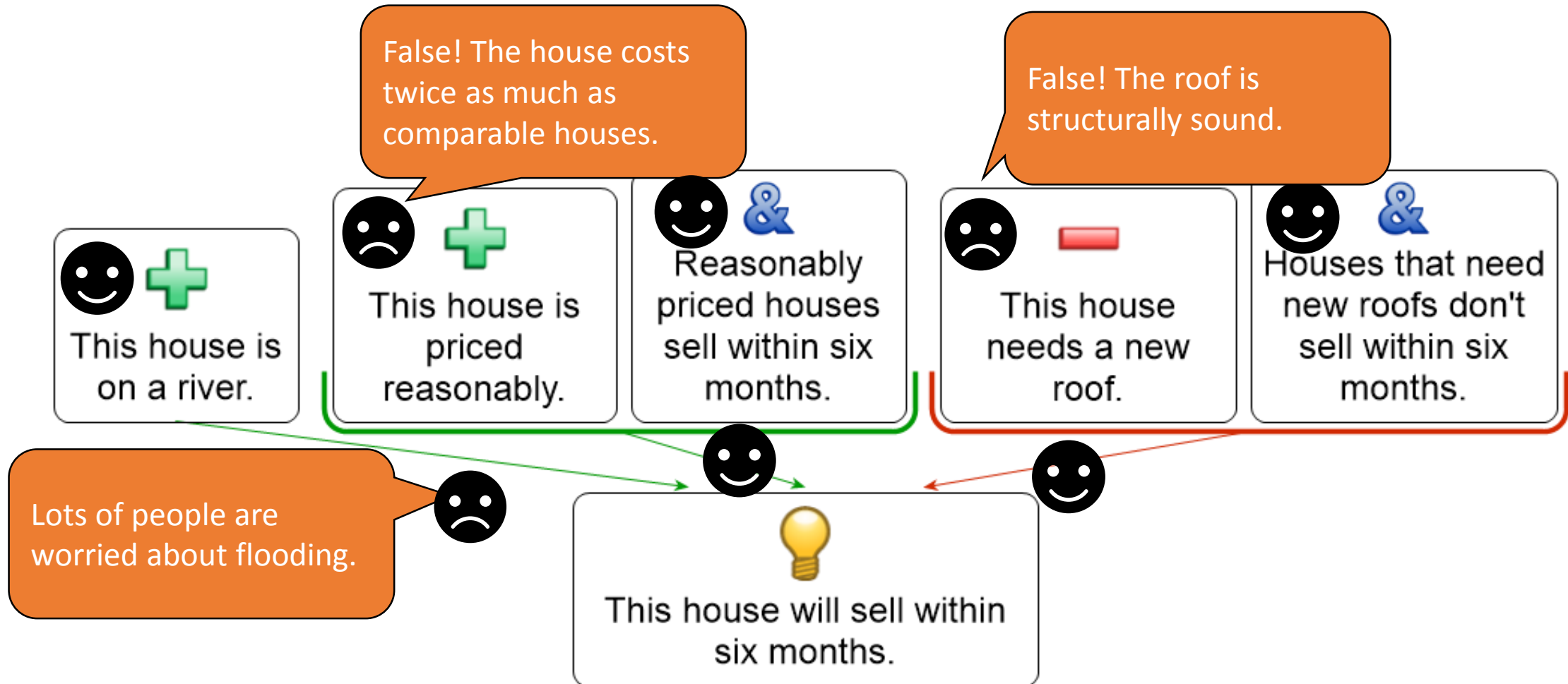
Assessing Reasons

Are the reasons true?

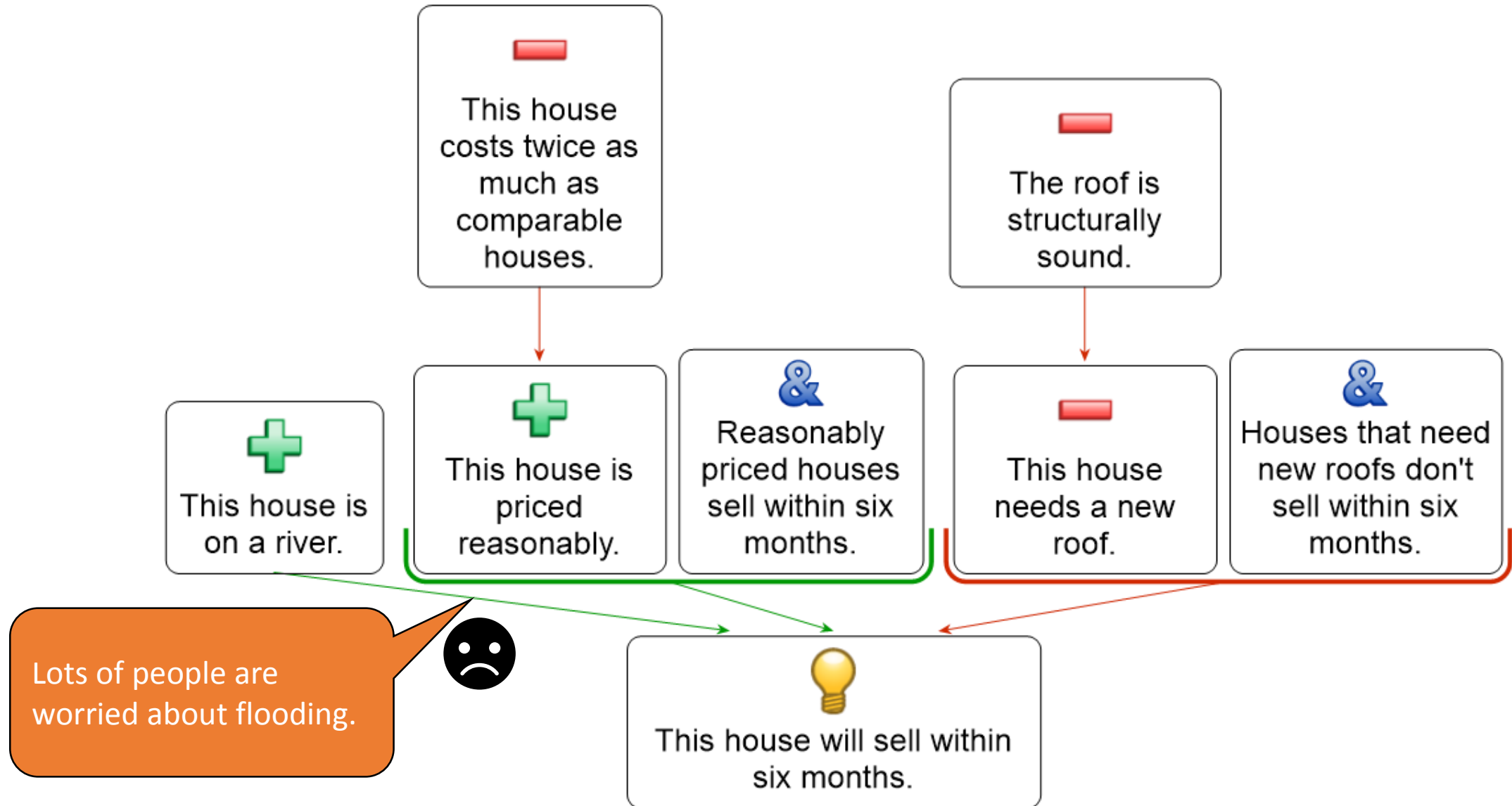


Assessing Connections

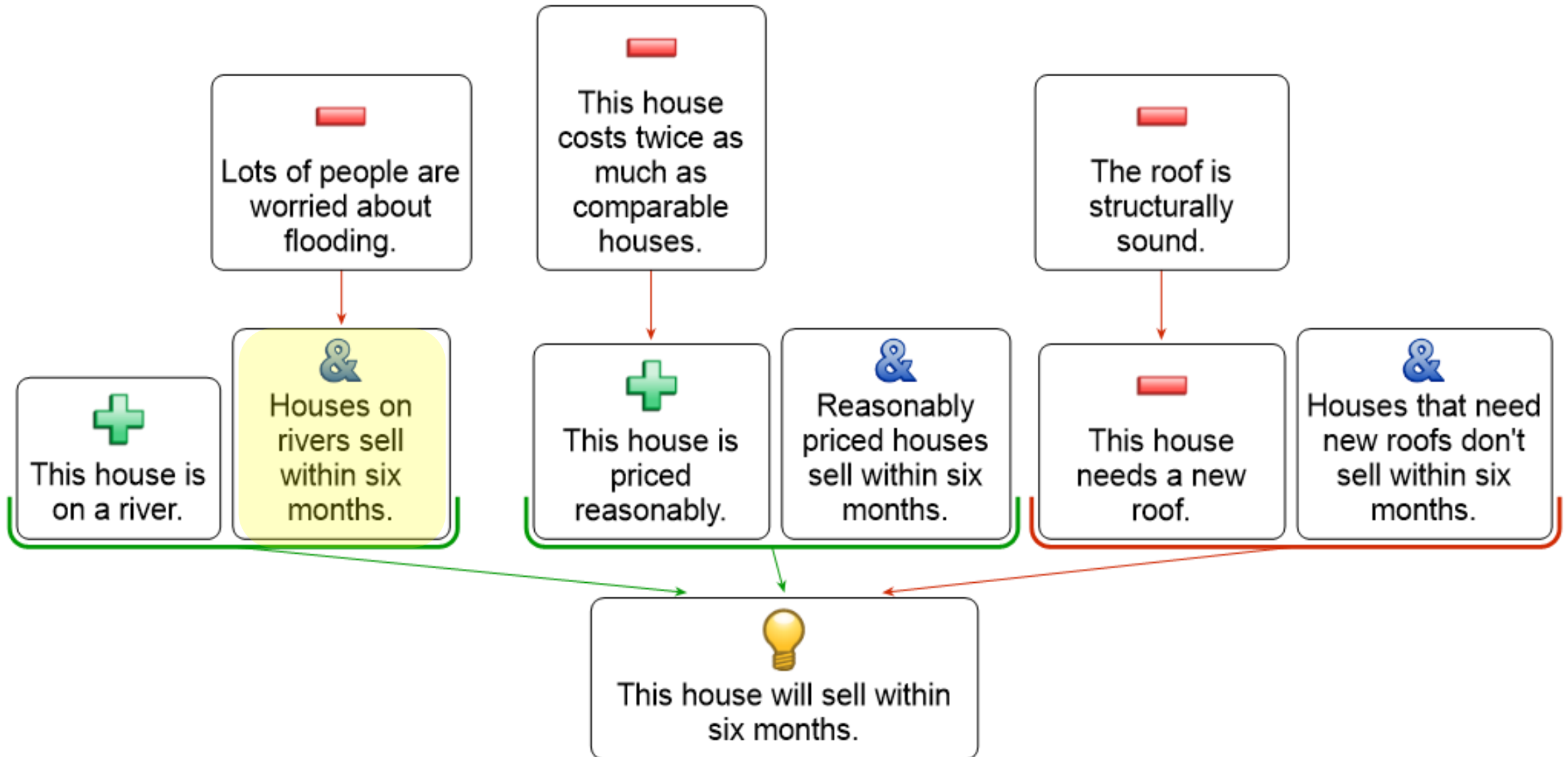
If the reasons were true, would they show that the conclusion is probably true (or false)?



Mapping Objections to Reasons



Mapping Objections to Connections



Visual Thinking

Concept Maps

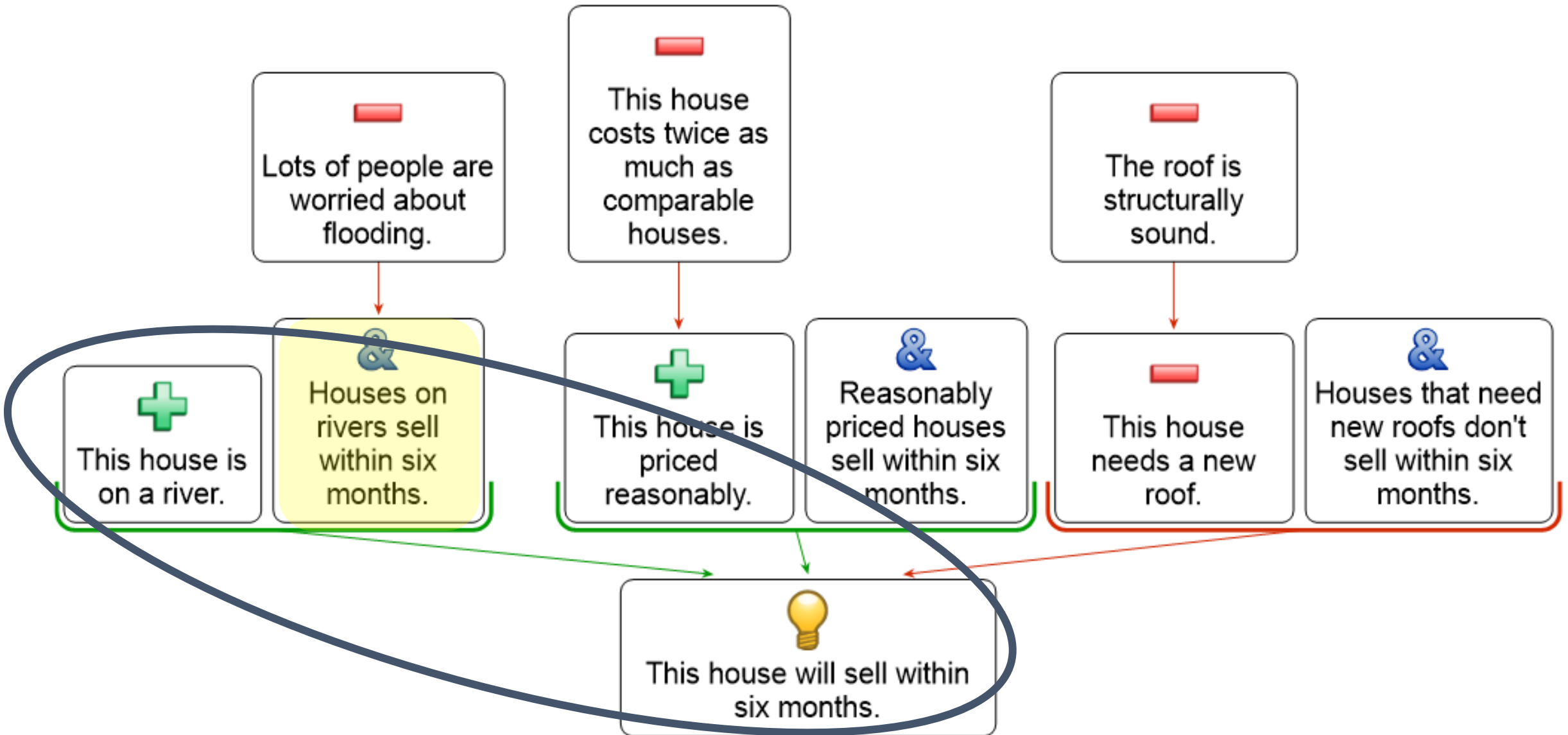
Argument Maps

Logical Structure of Reasoning

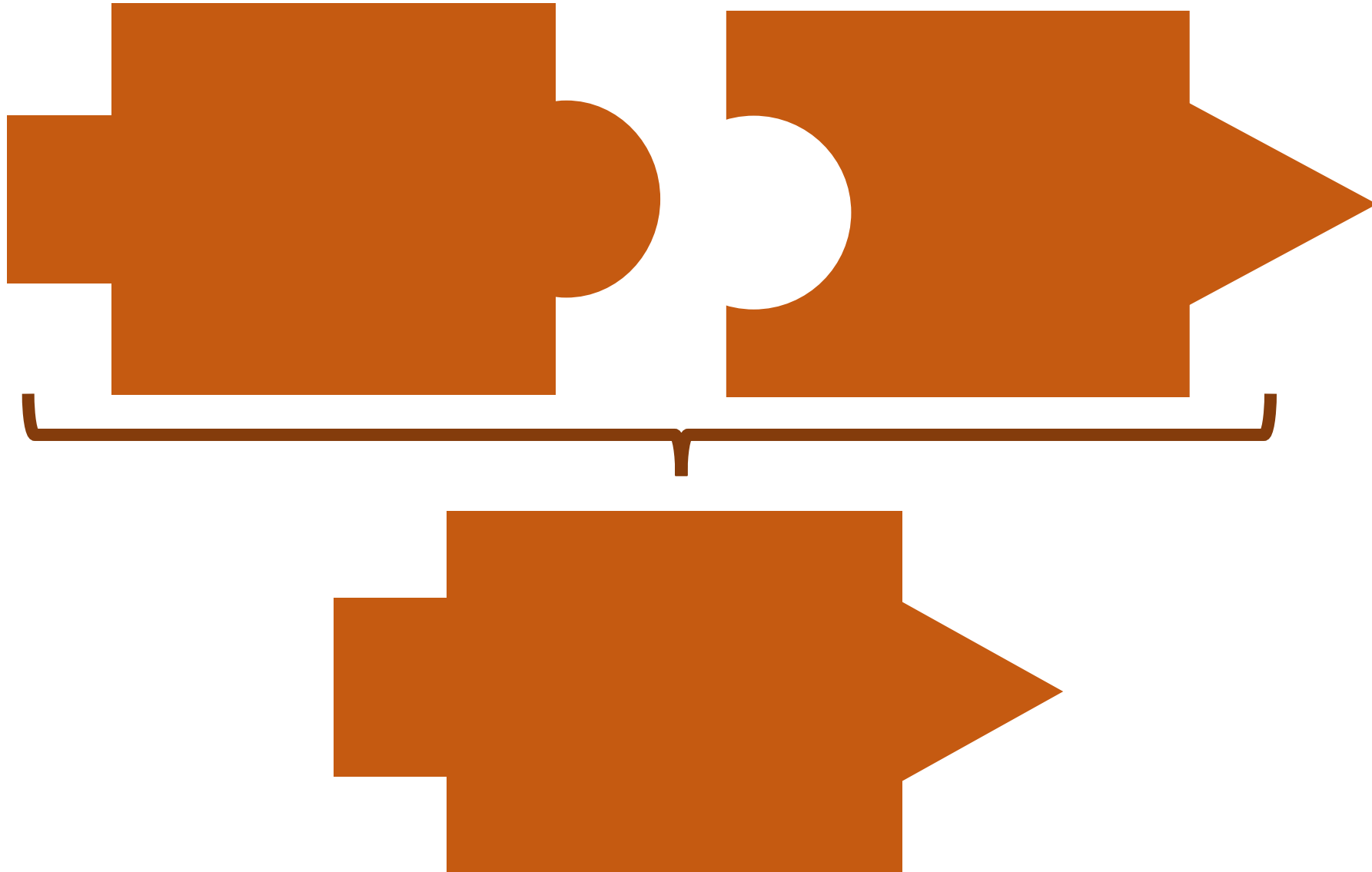
Evaluation of Reasoning

Uncovering Hidden Assumptions

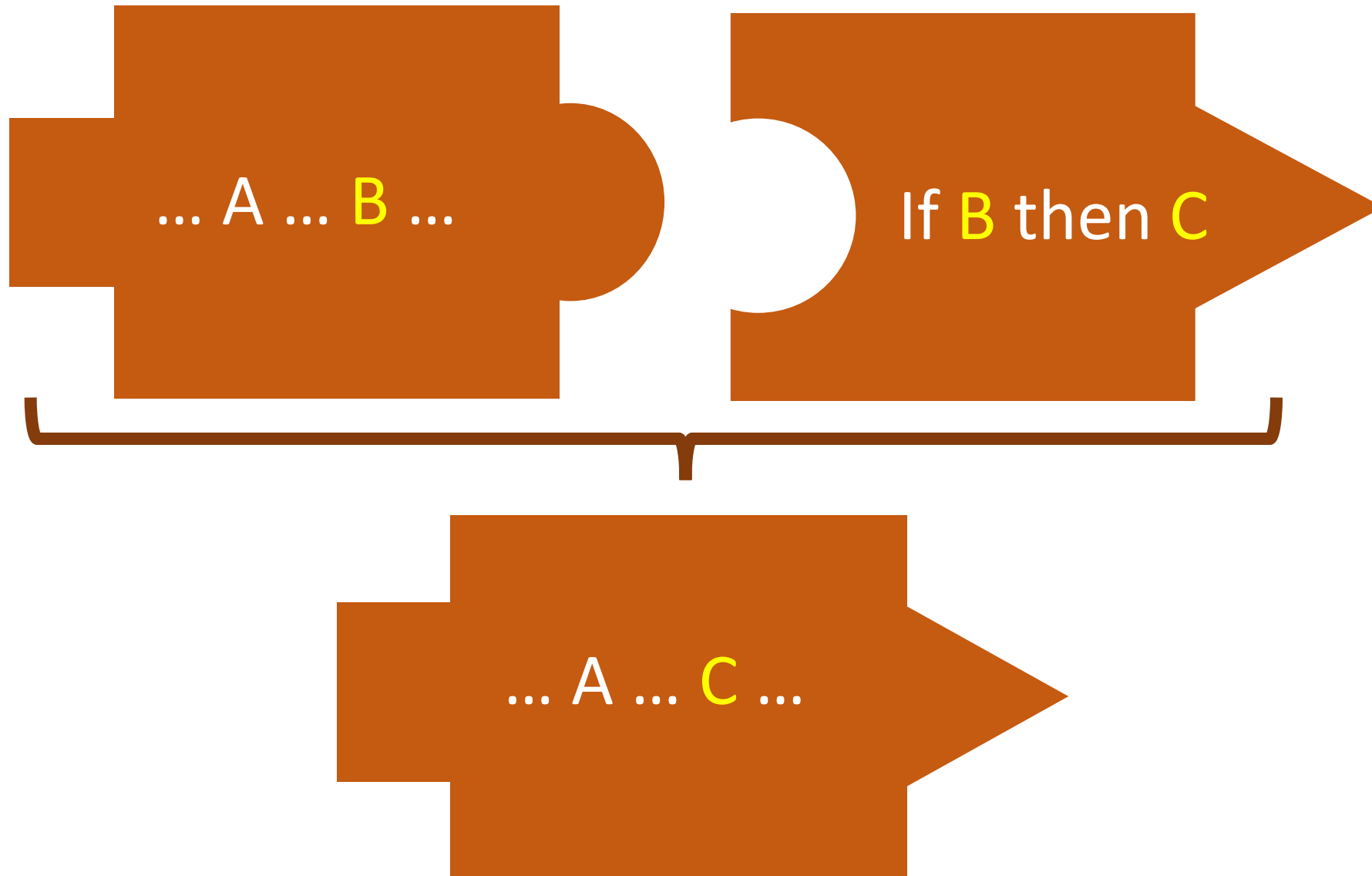
Mapping Objections to Connections



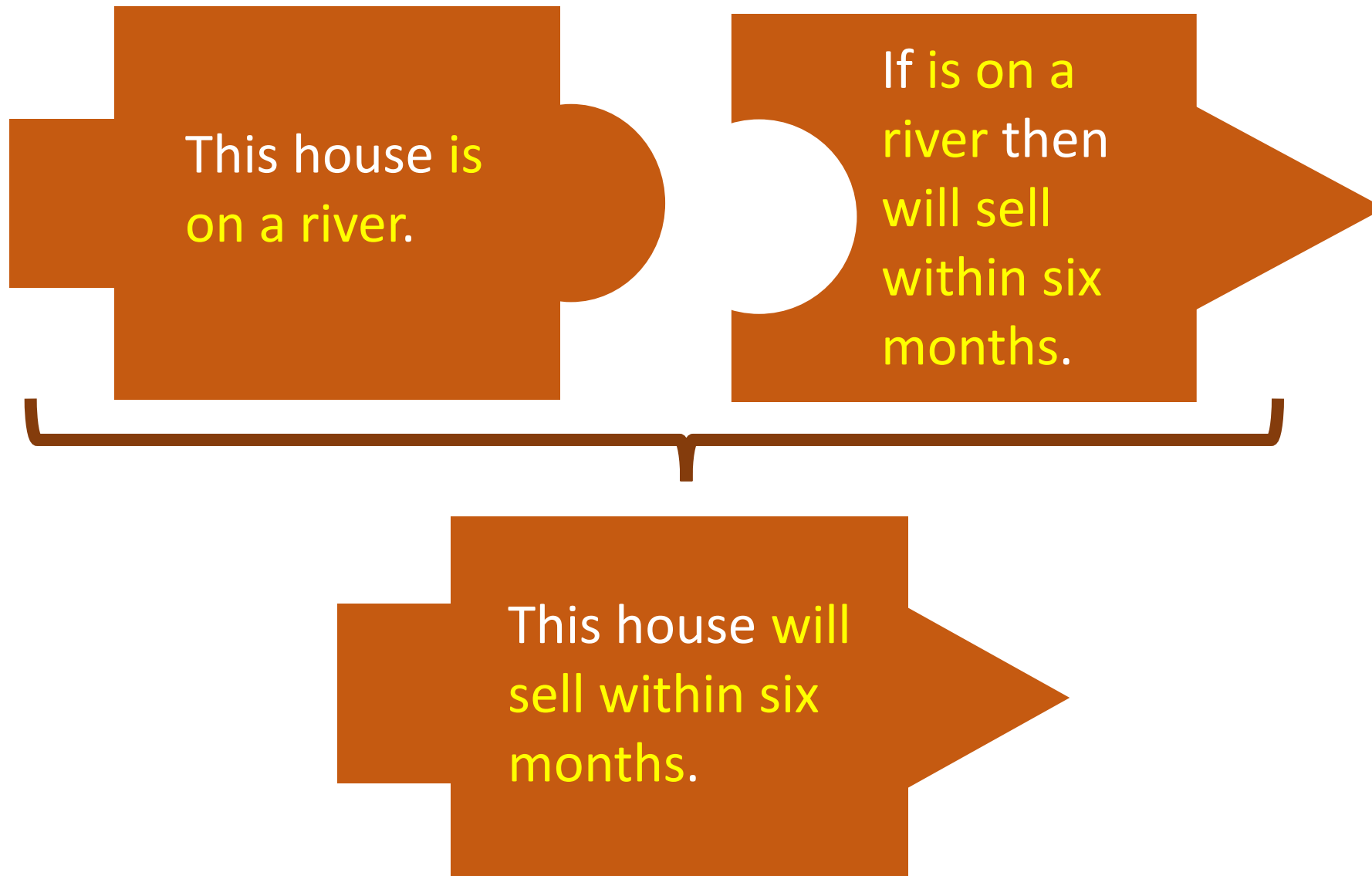
Uncovering Hidden Assumptions



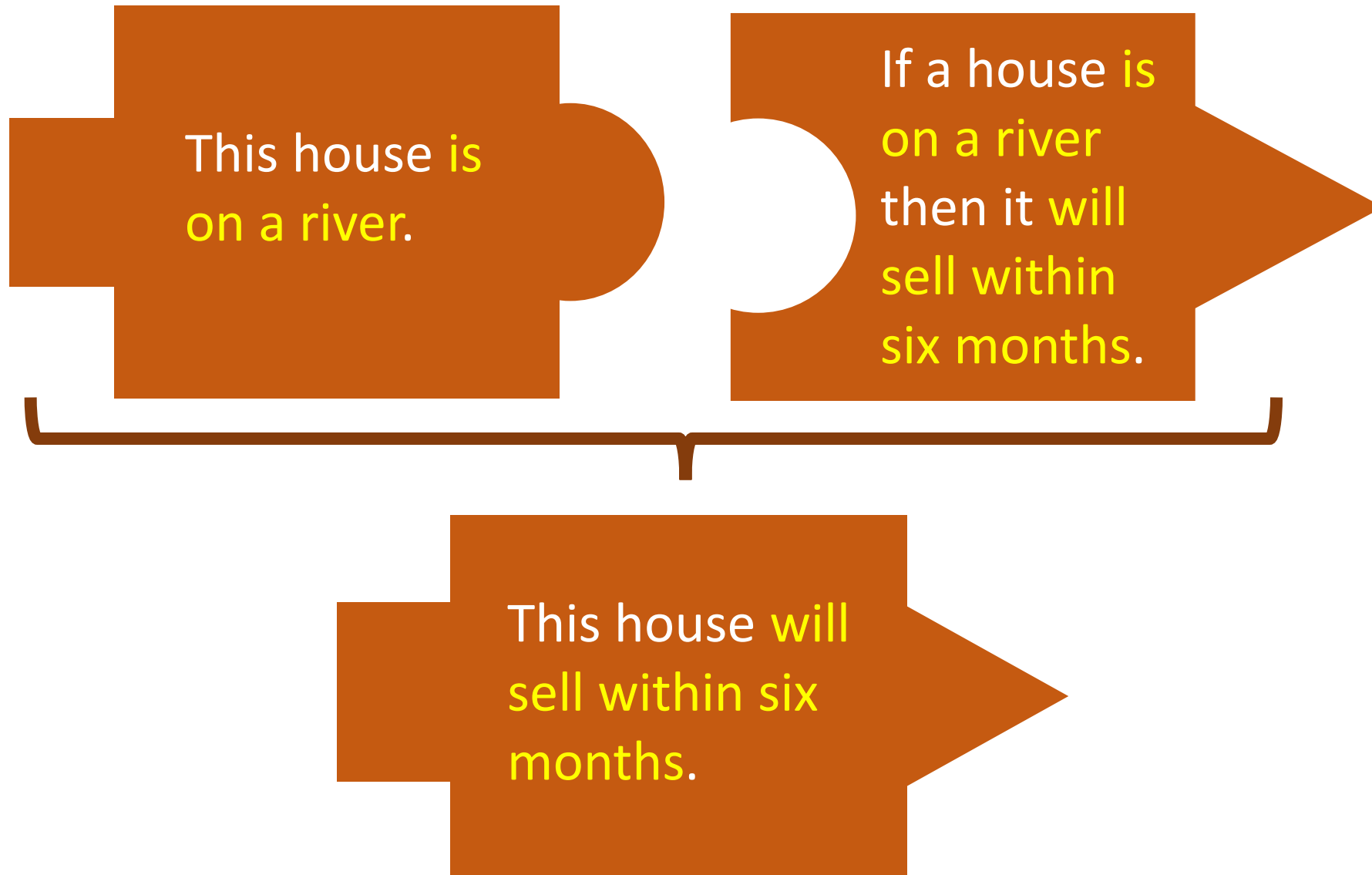
Uncovering Hidden Assumptions



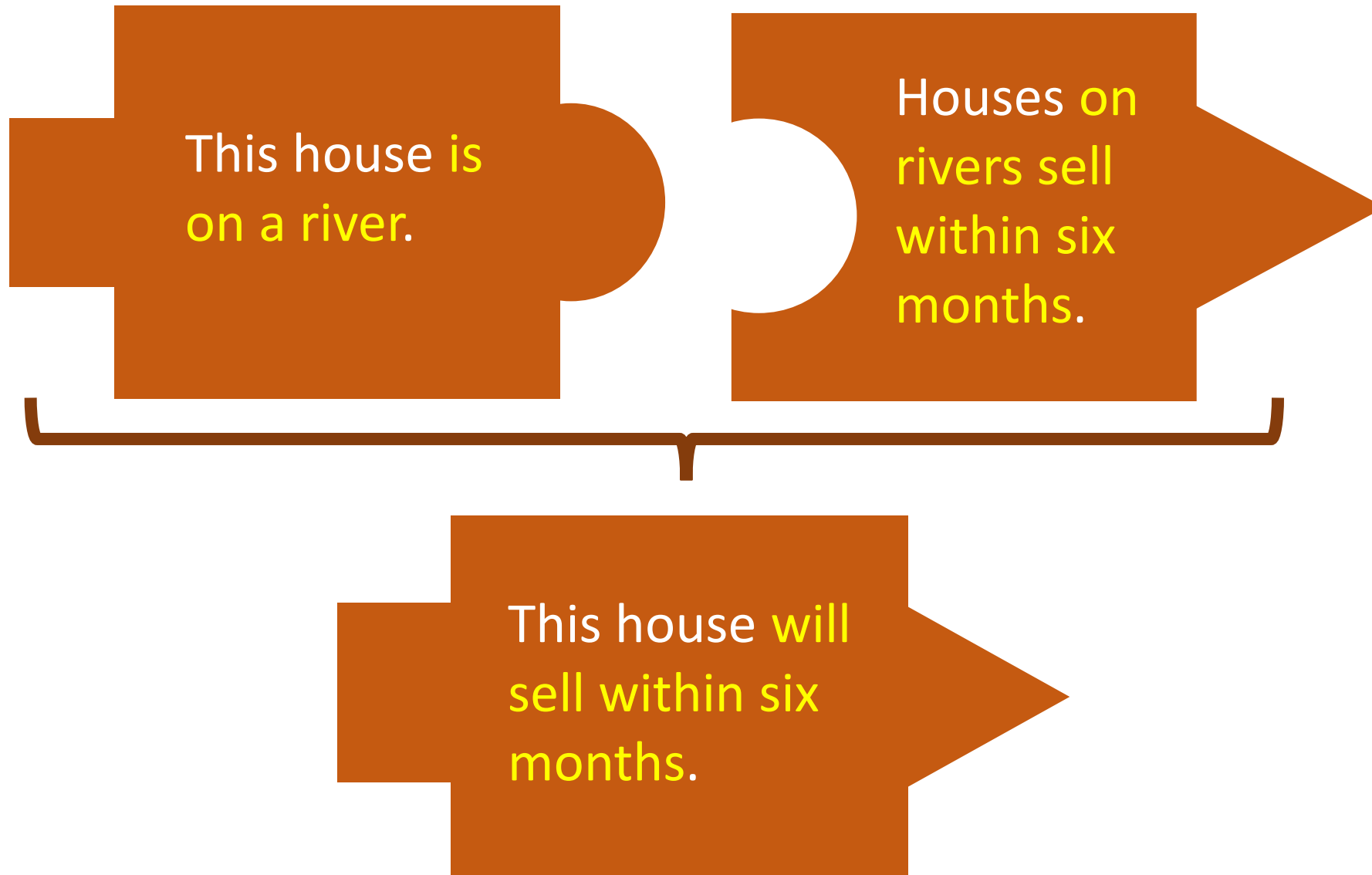
Uncovering Hidden Assumptions



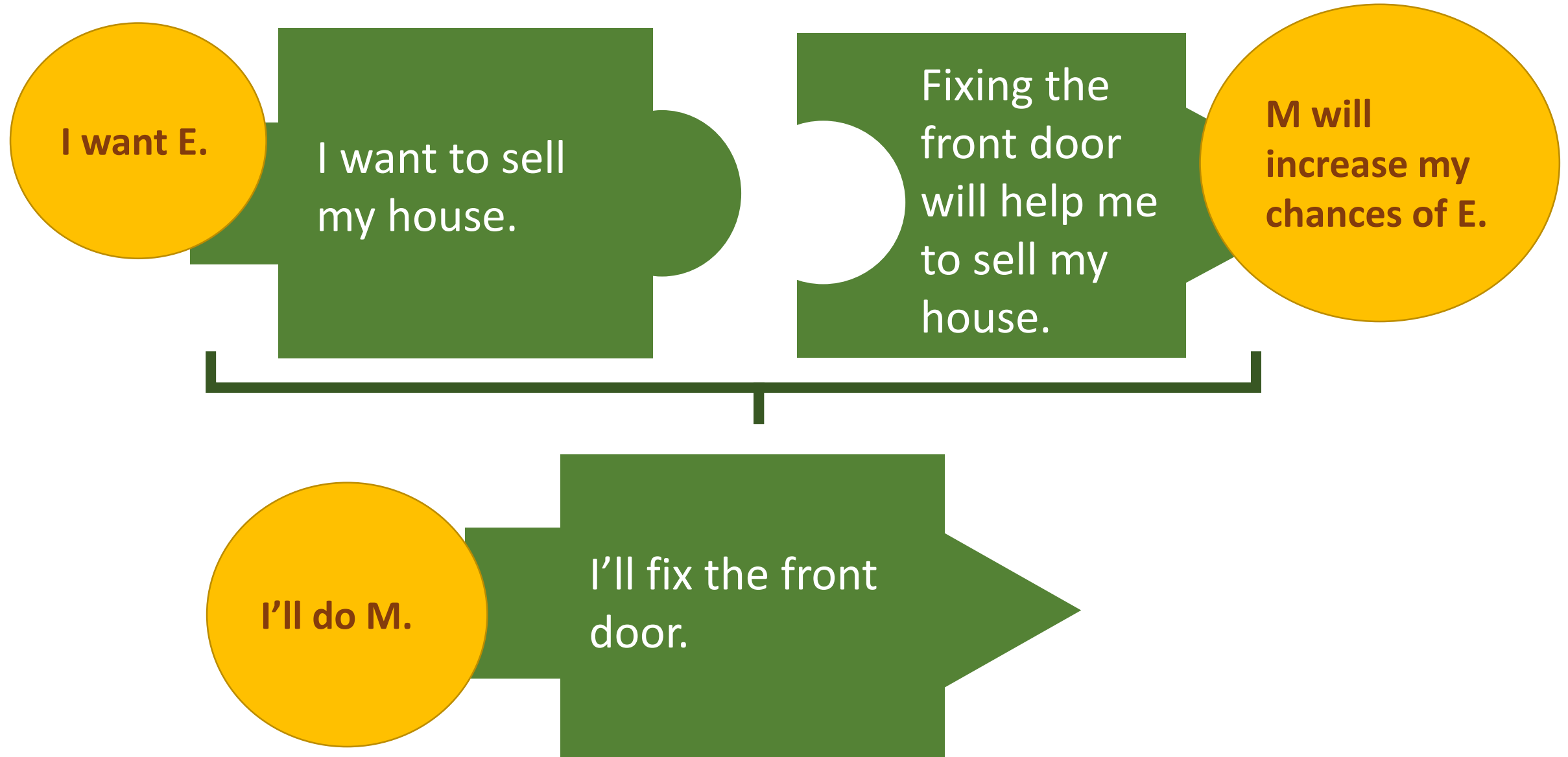
Uncovering Hidden Assumptions



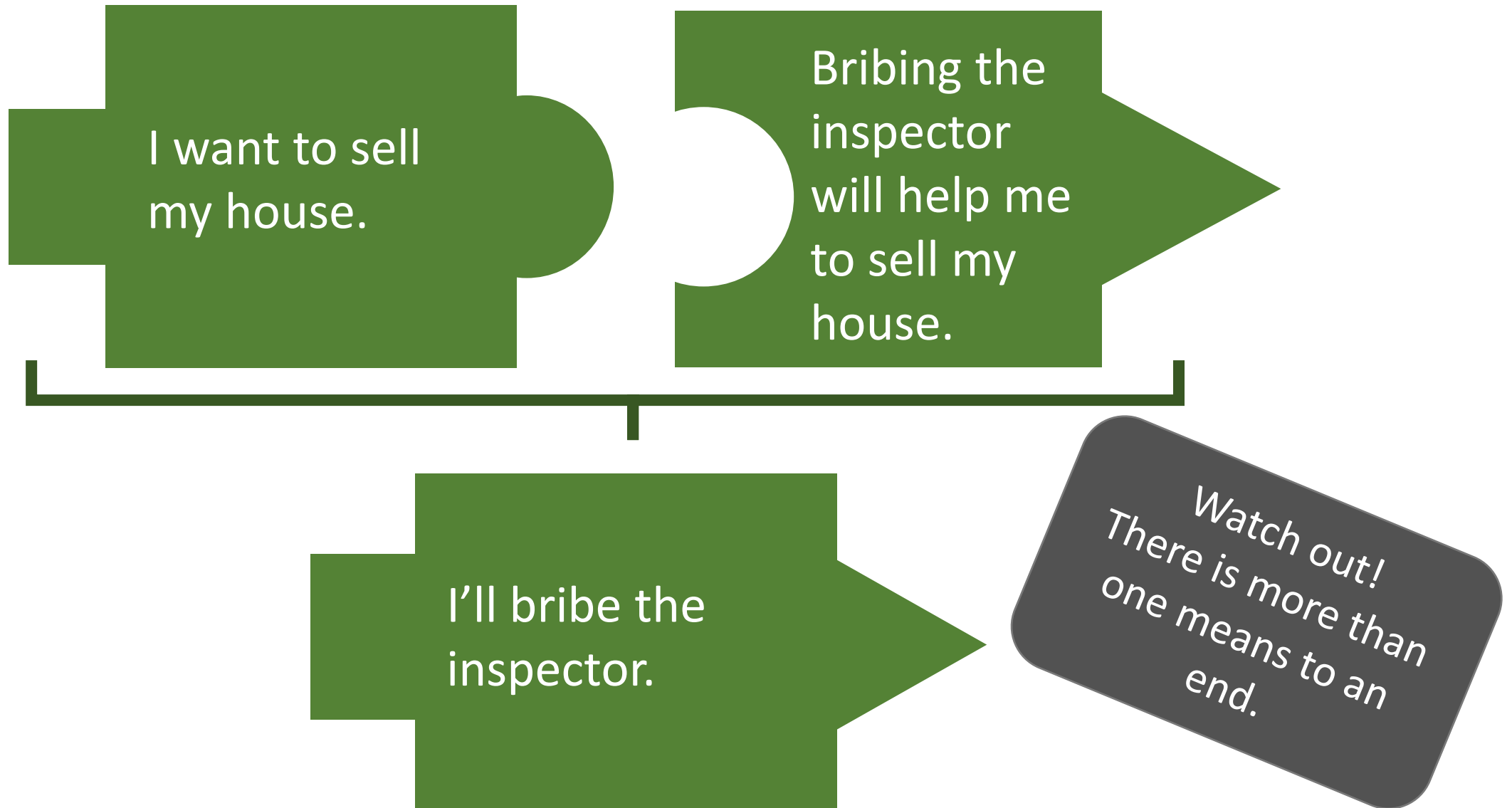
Uncovering Hidden Assumptions



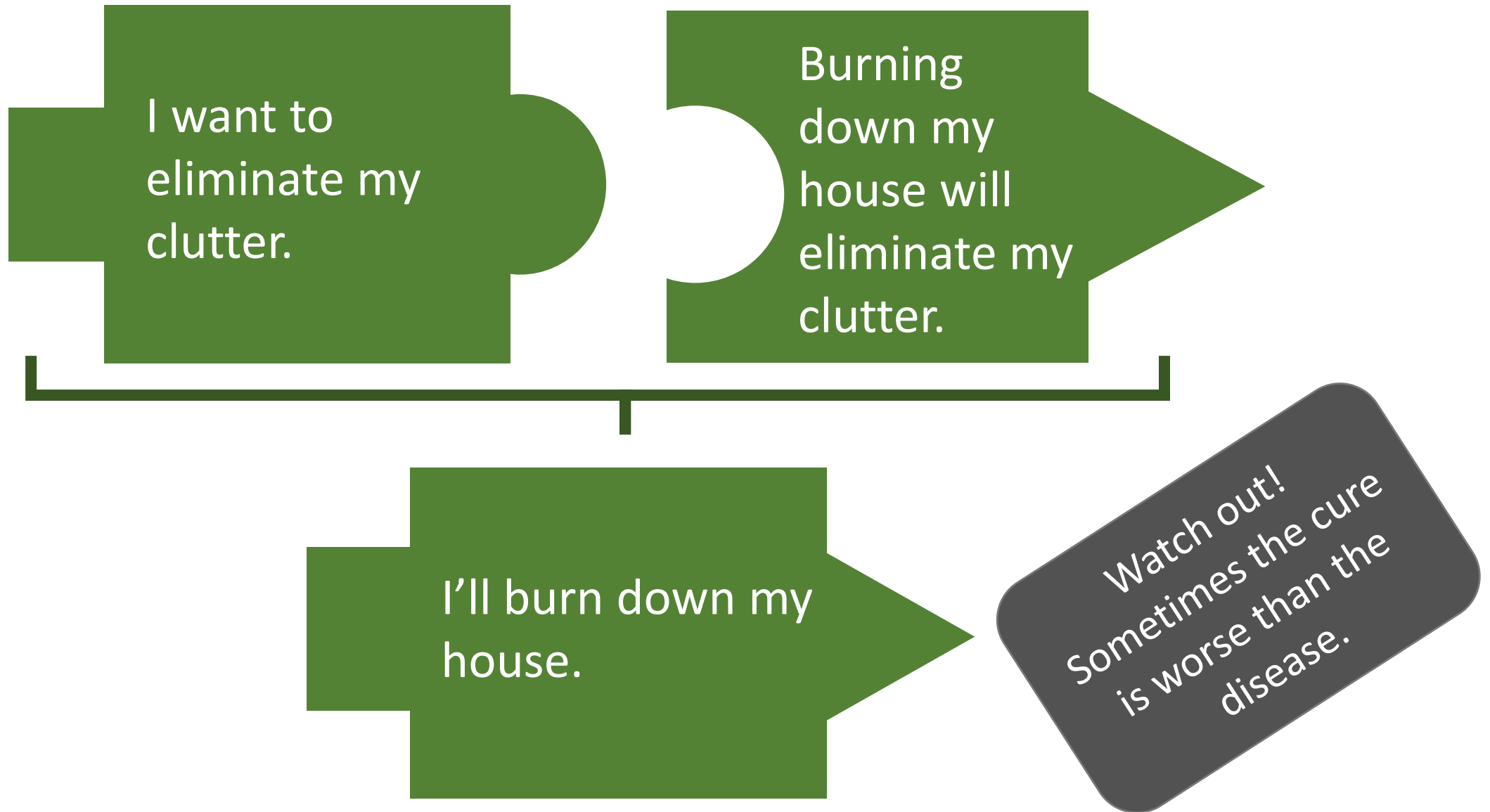
Means / Ends Reasoning



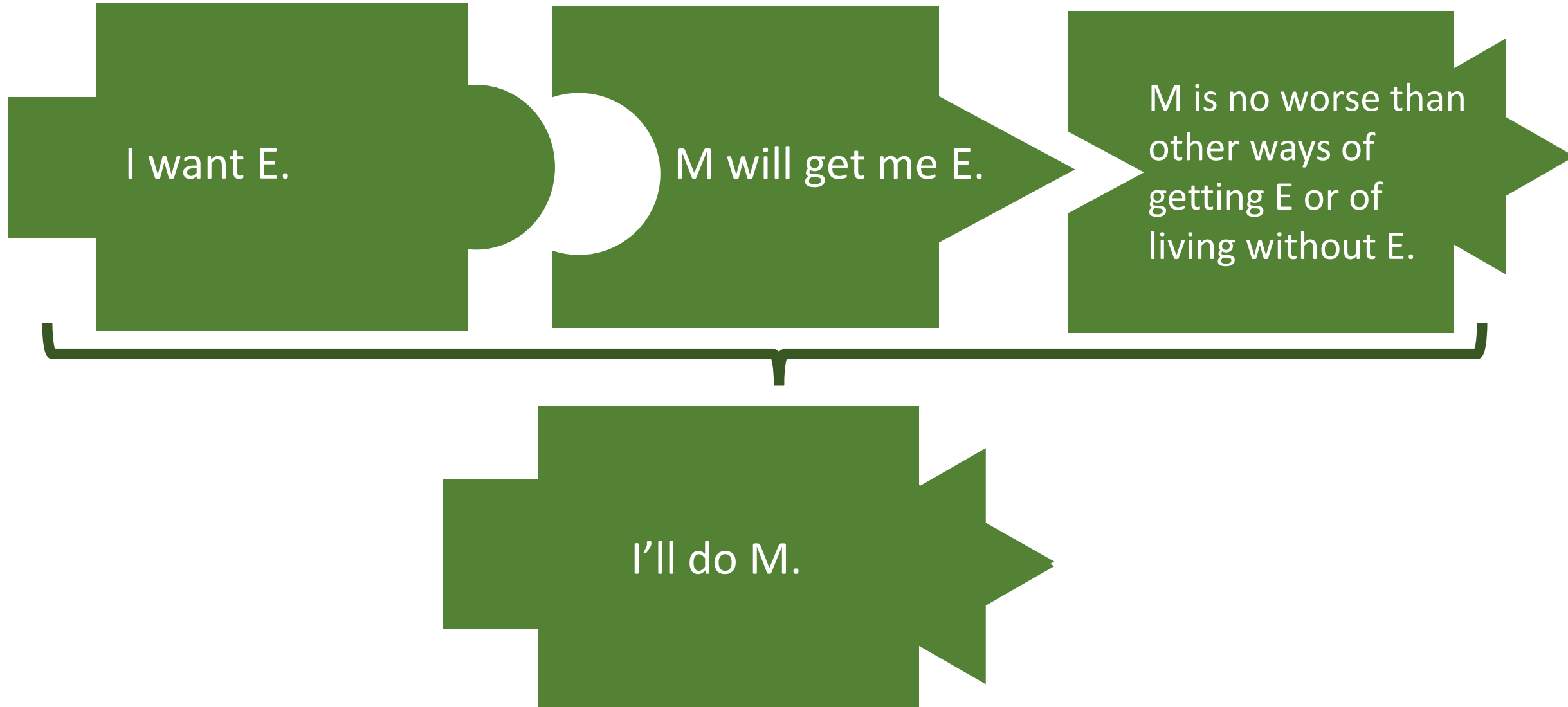
Means / Ends Reasoning



Means / Ends Reasoning



Means / Ends Reasoning

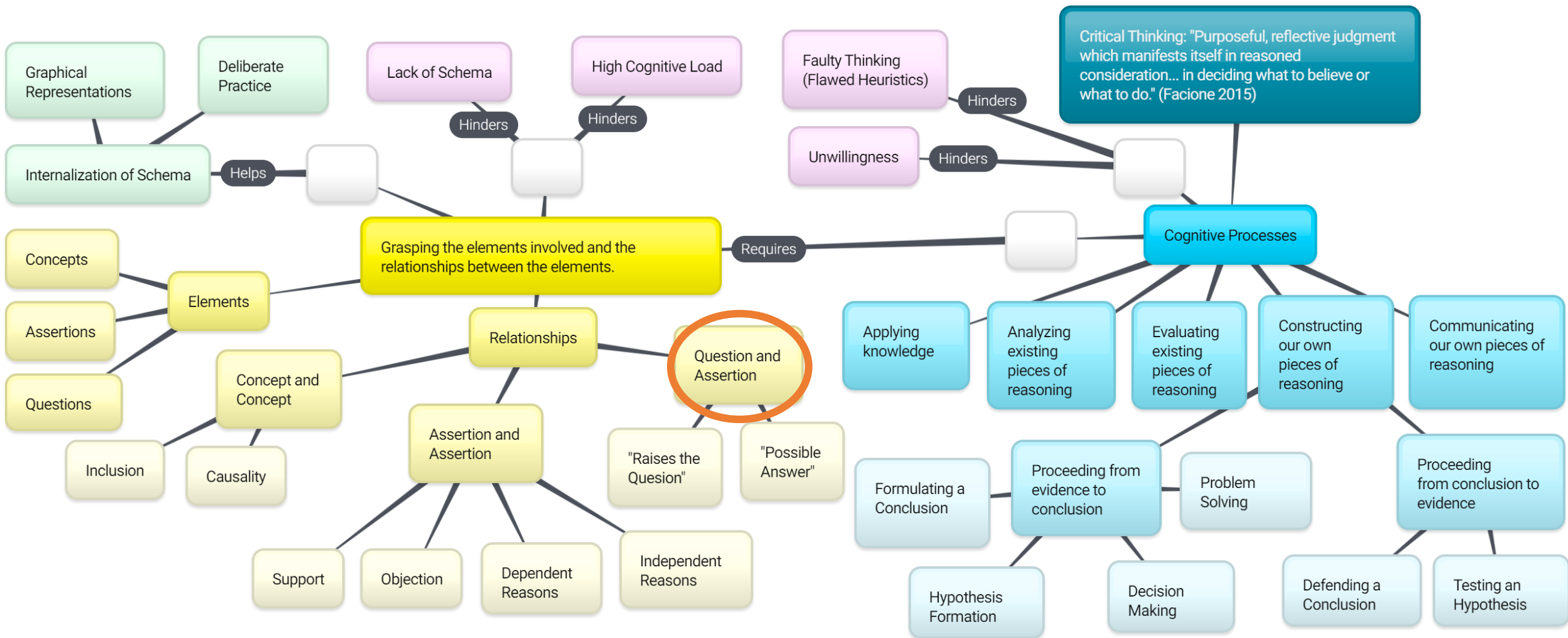


Visual Thinking

Concept Maps

Argument Maps

Dialogue Maps

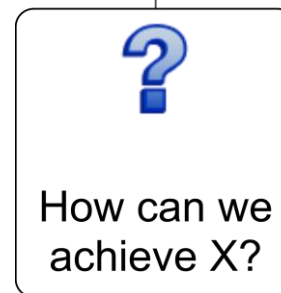
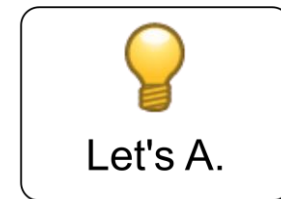


Mapping a Dialogue

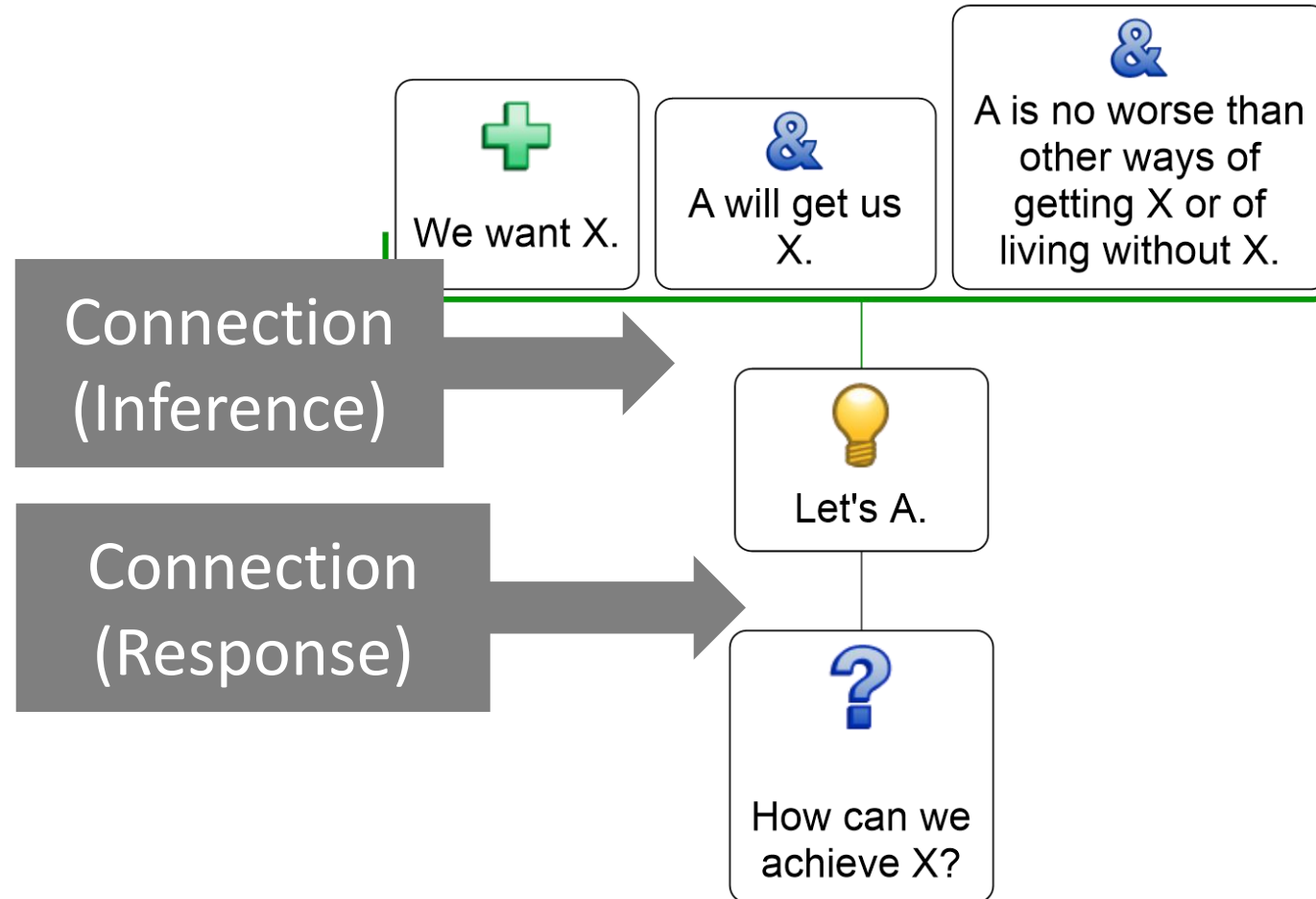


How can we
achieve X?

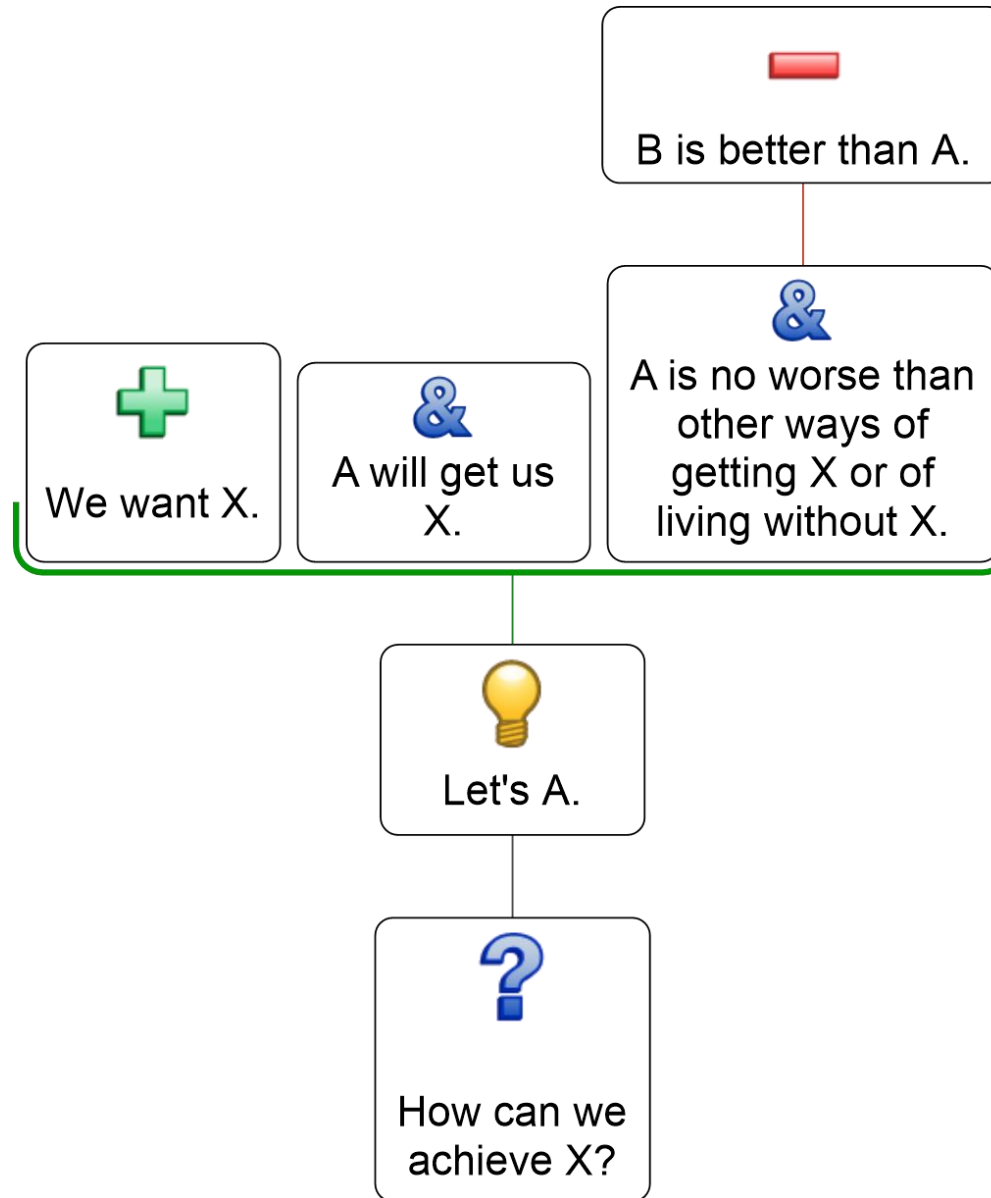
Mapping a Dialogue



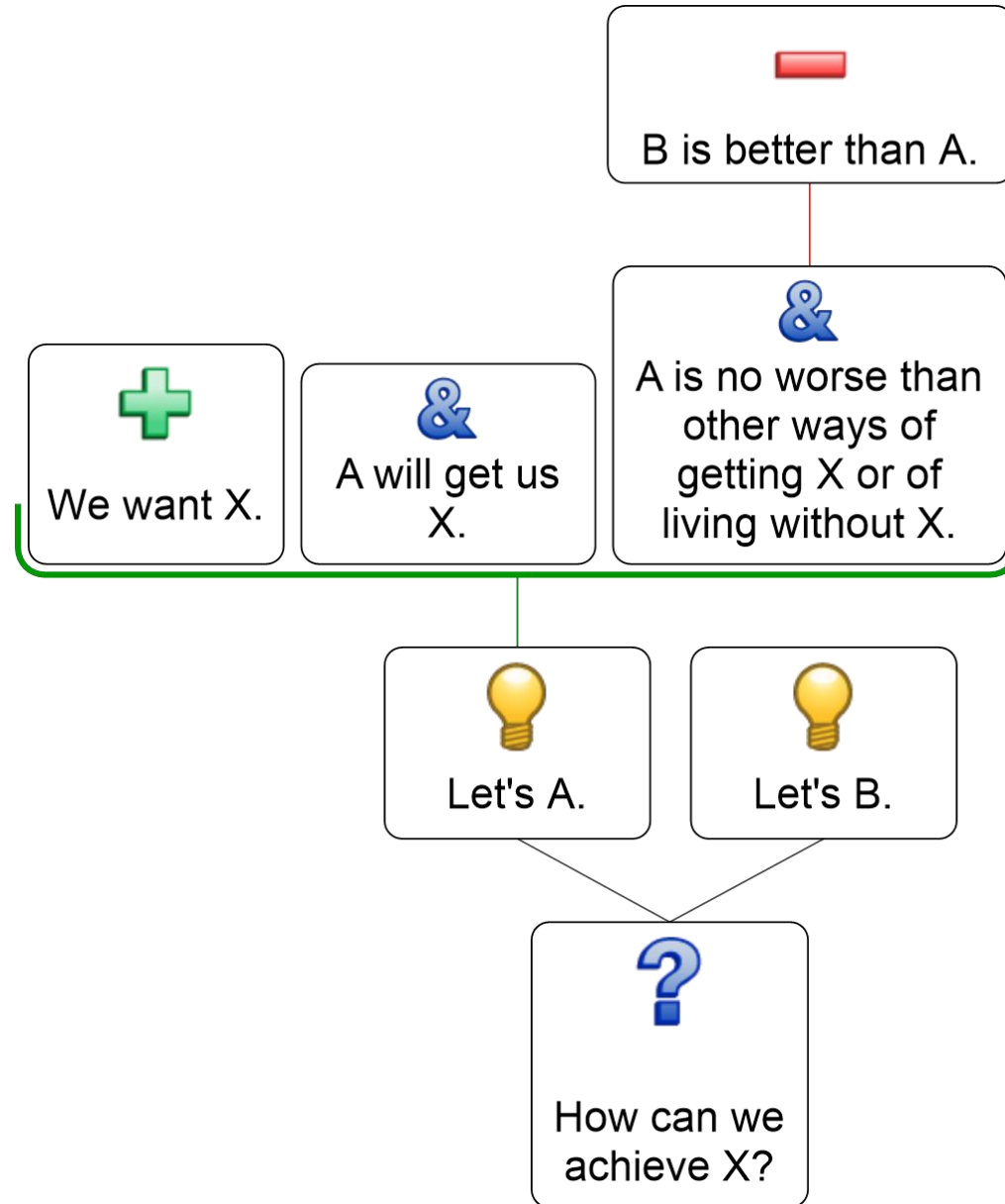
Mapping a Dialogue



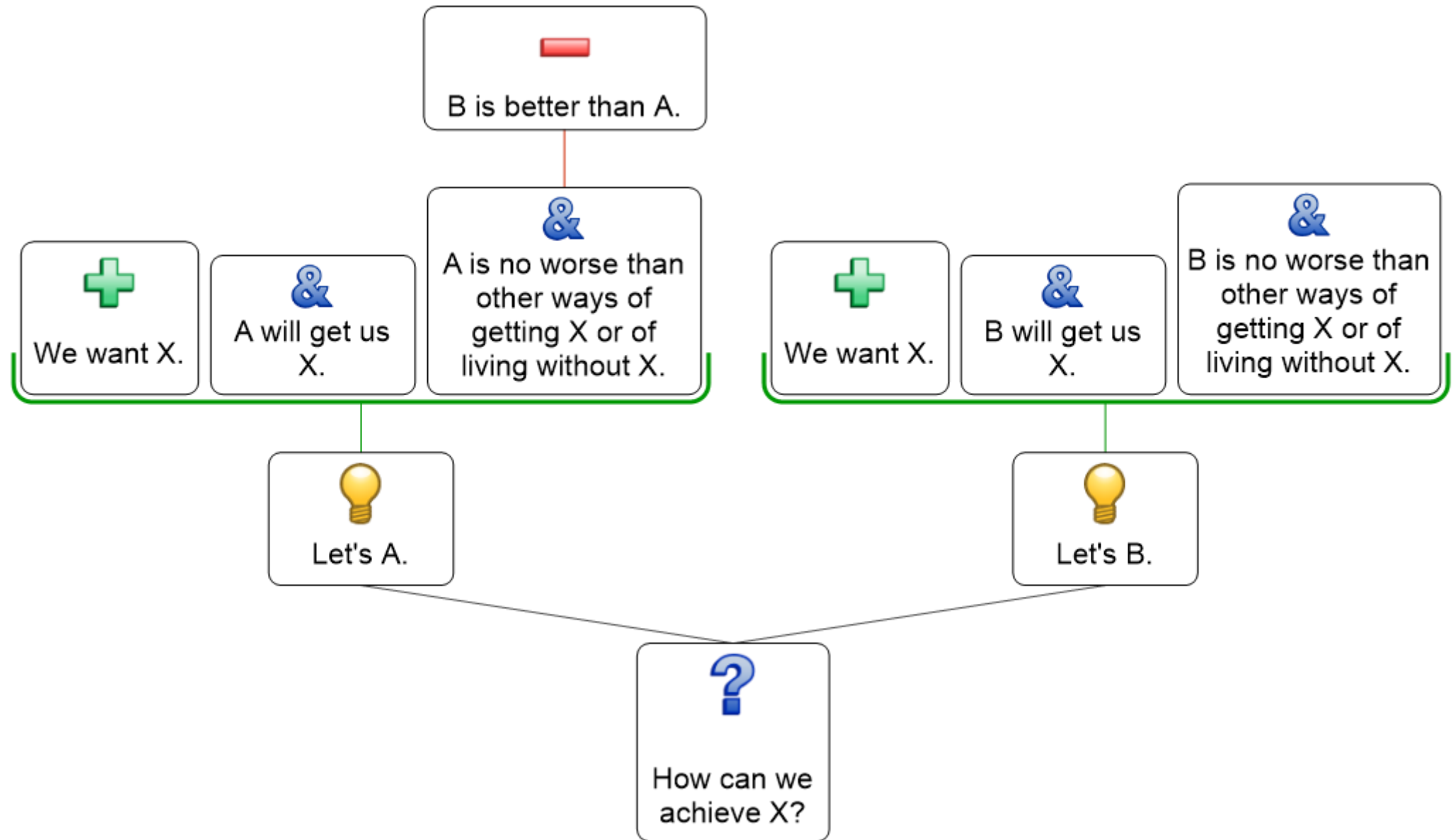
Mapping a Dialogue



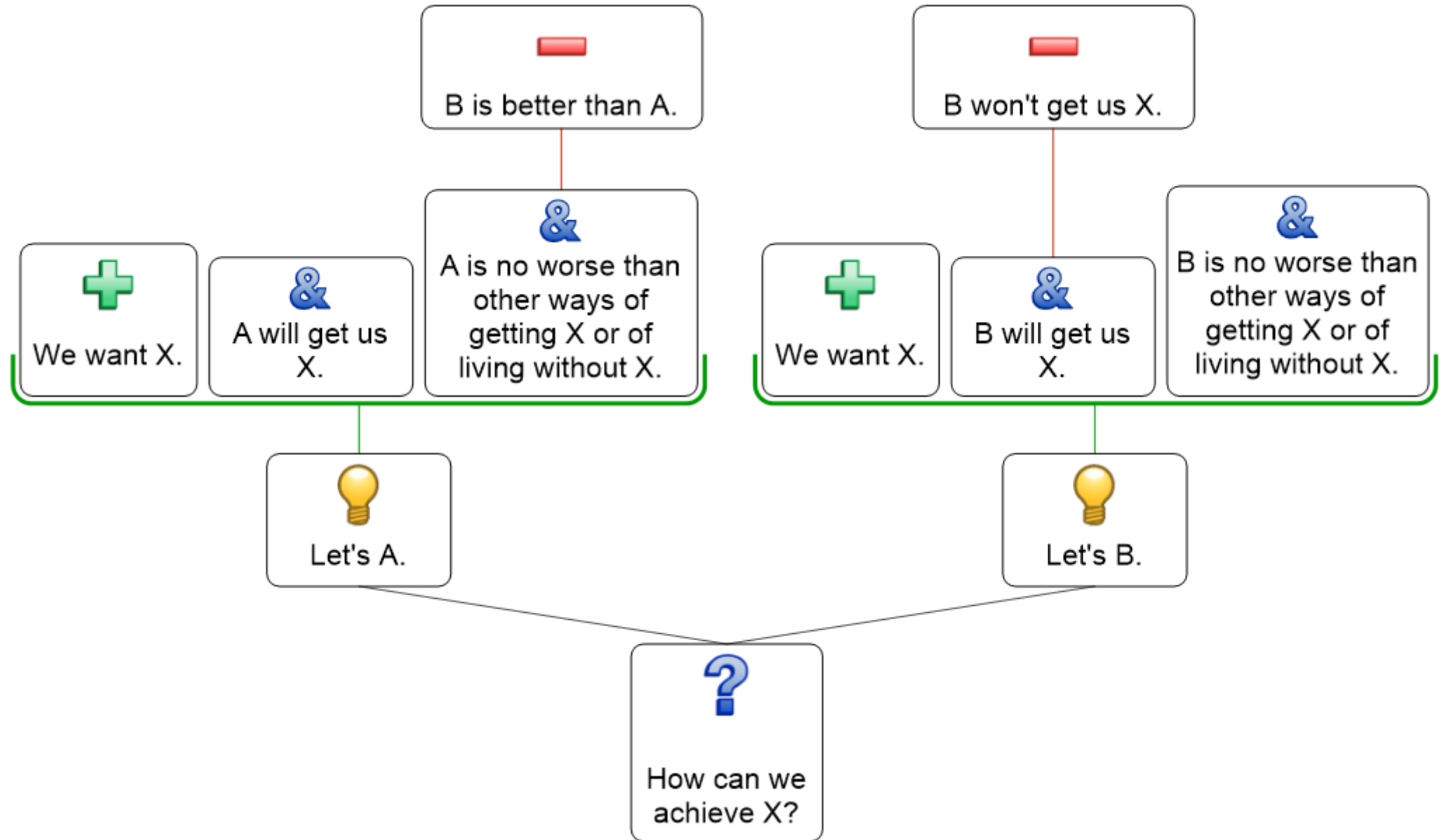
Mapping a Dialogue



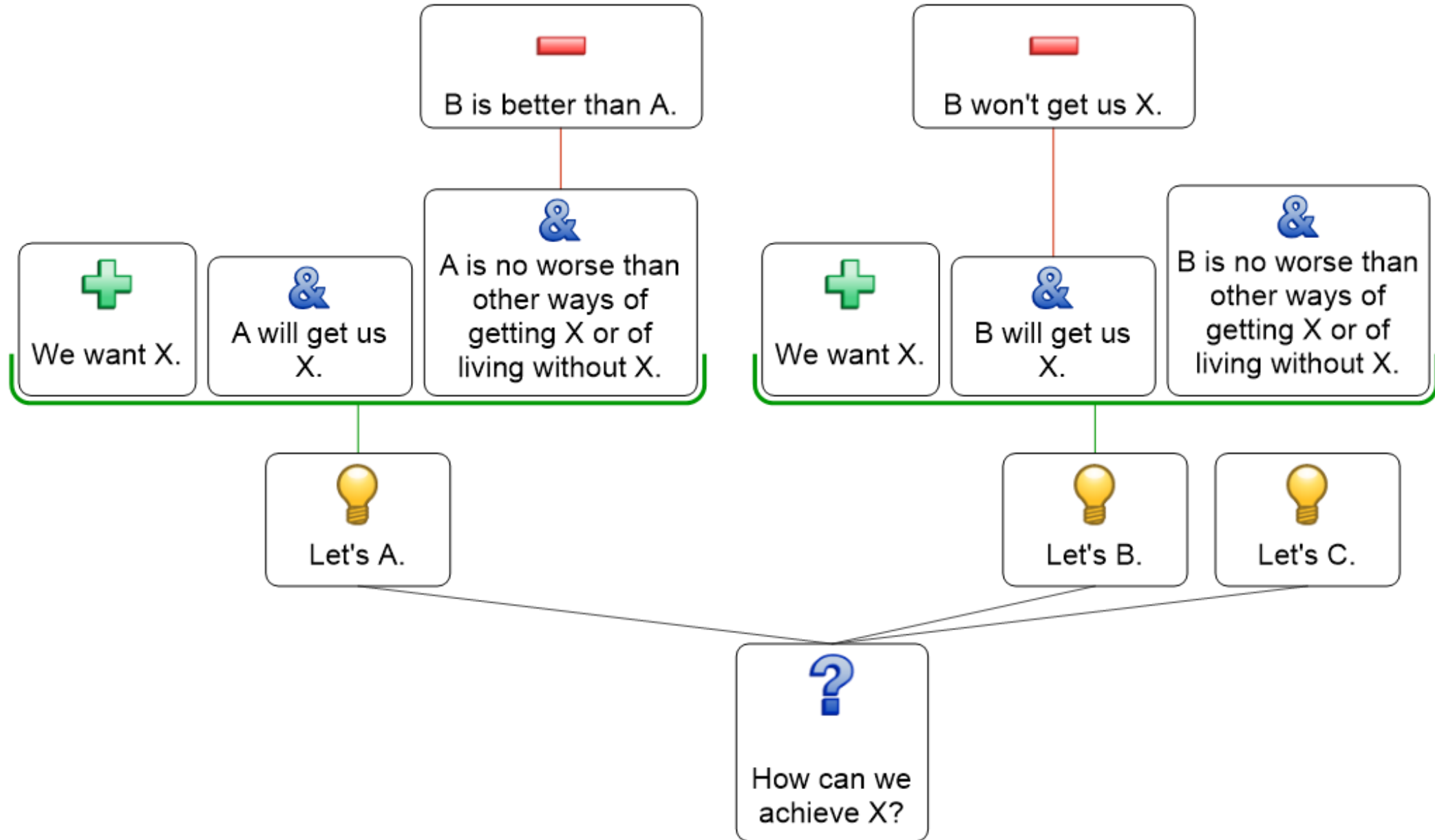
Mapping a Dialogue



Mapping a Dialogue

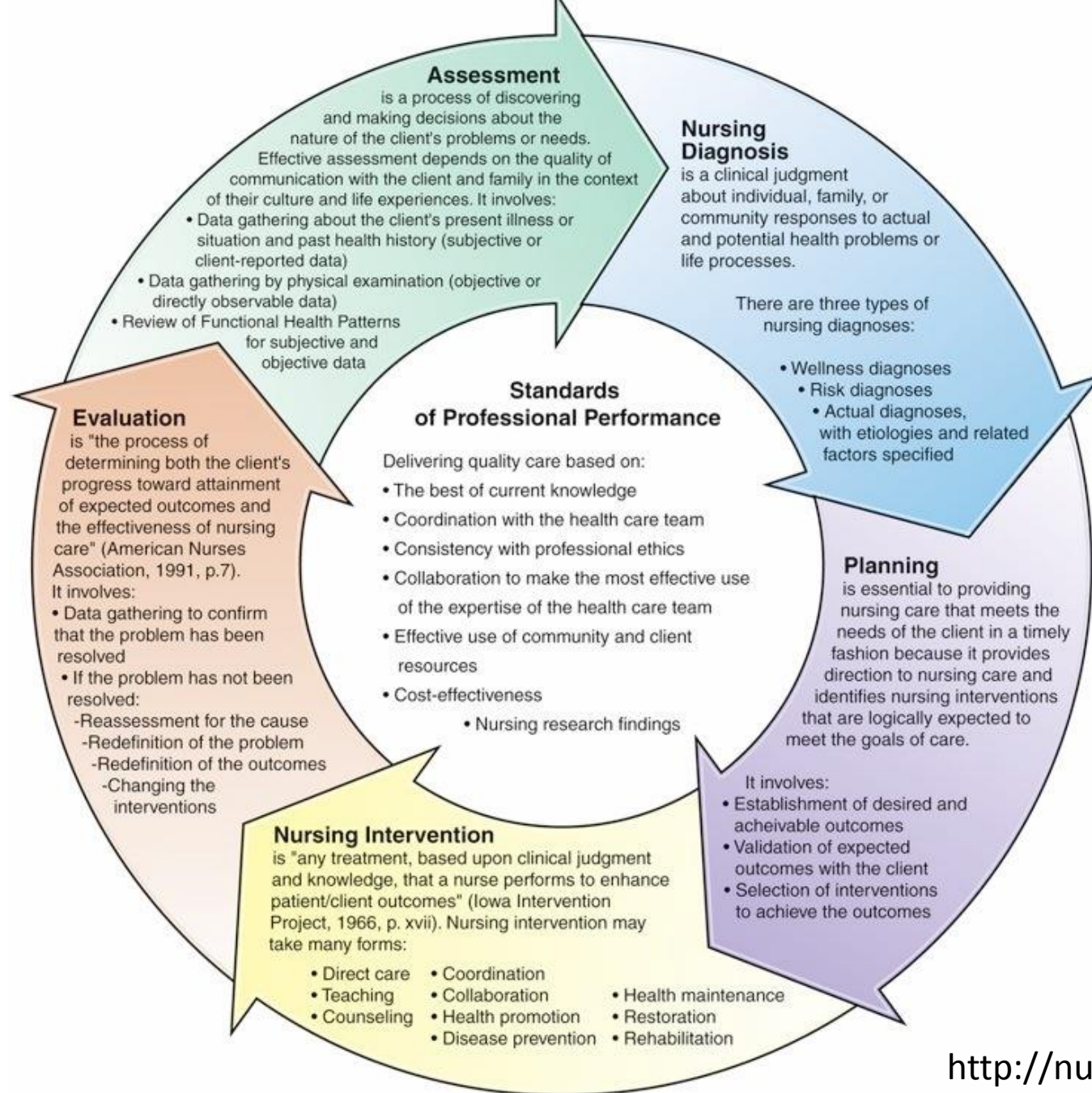


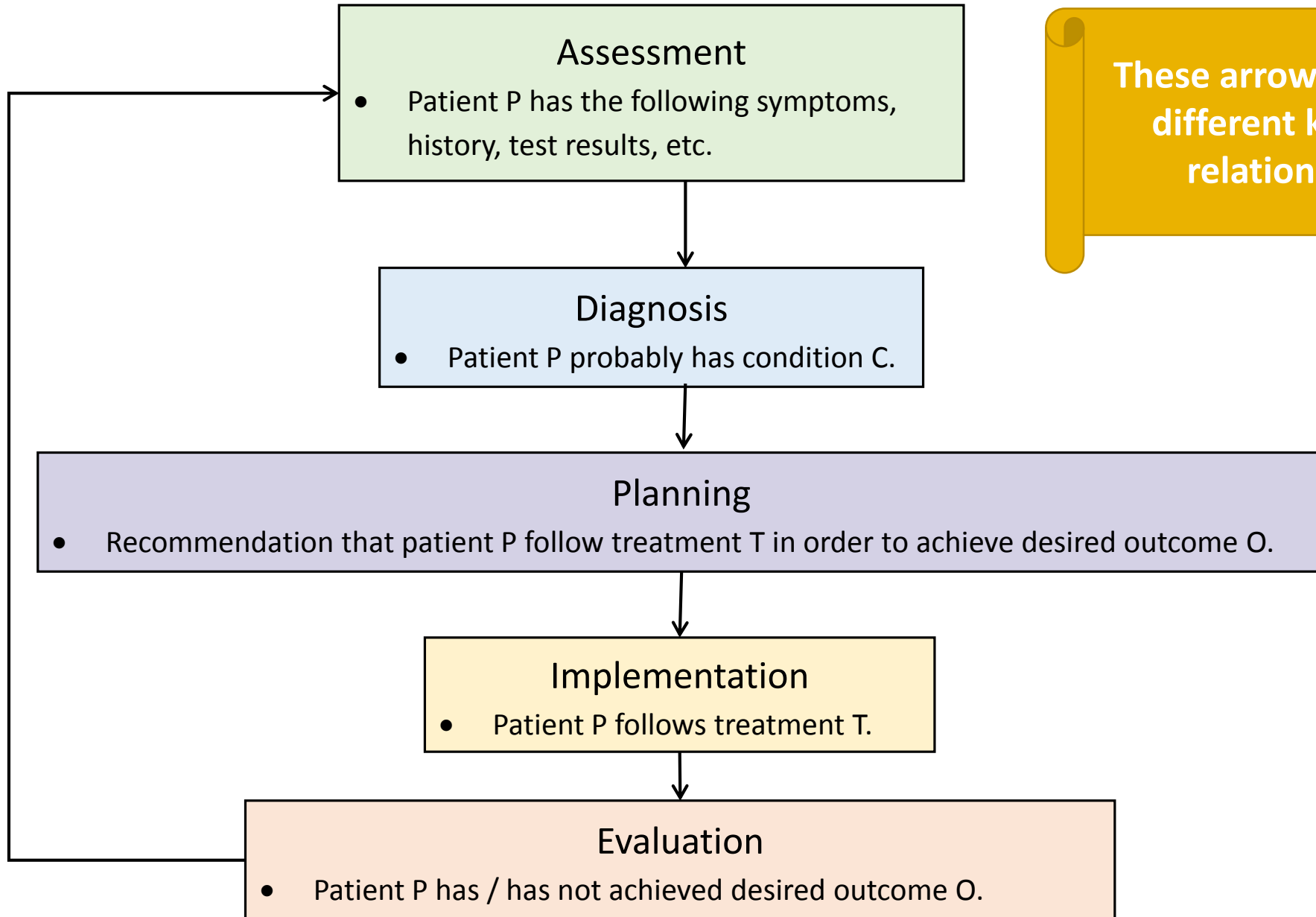
Mapping a Dialogue



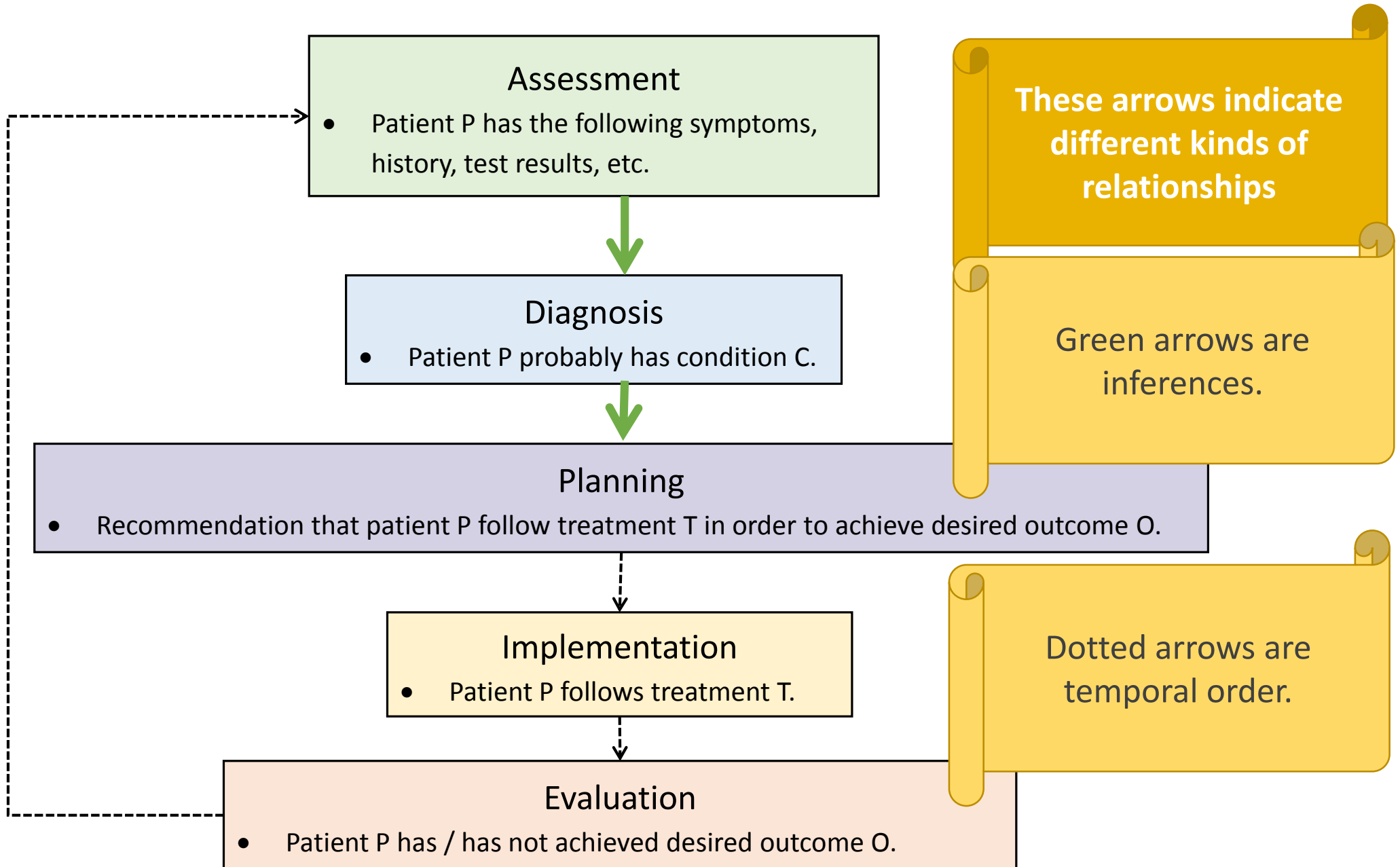
Critical Thinking and Visual Thinking in the Health Sciences

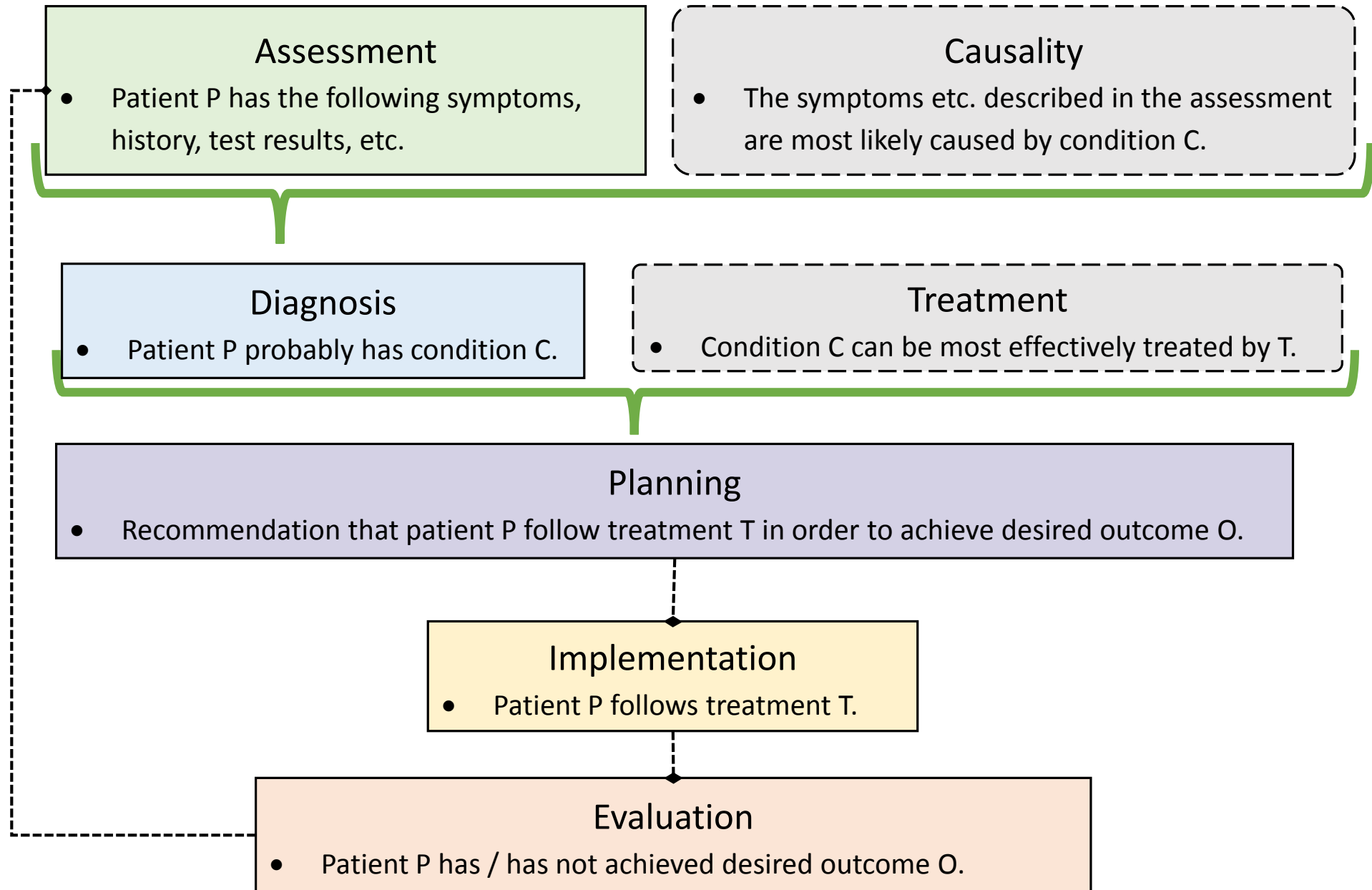
The Nursing Process





These arrows indicate different kinds of relationships

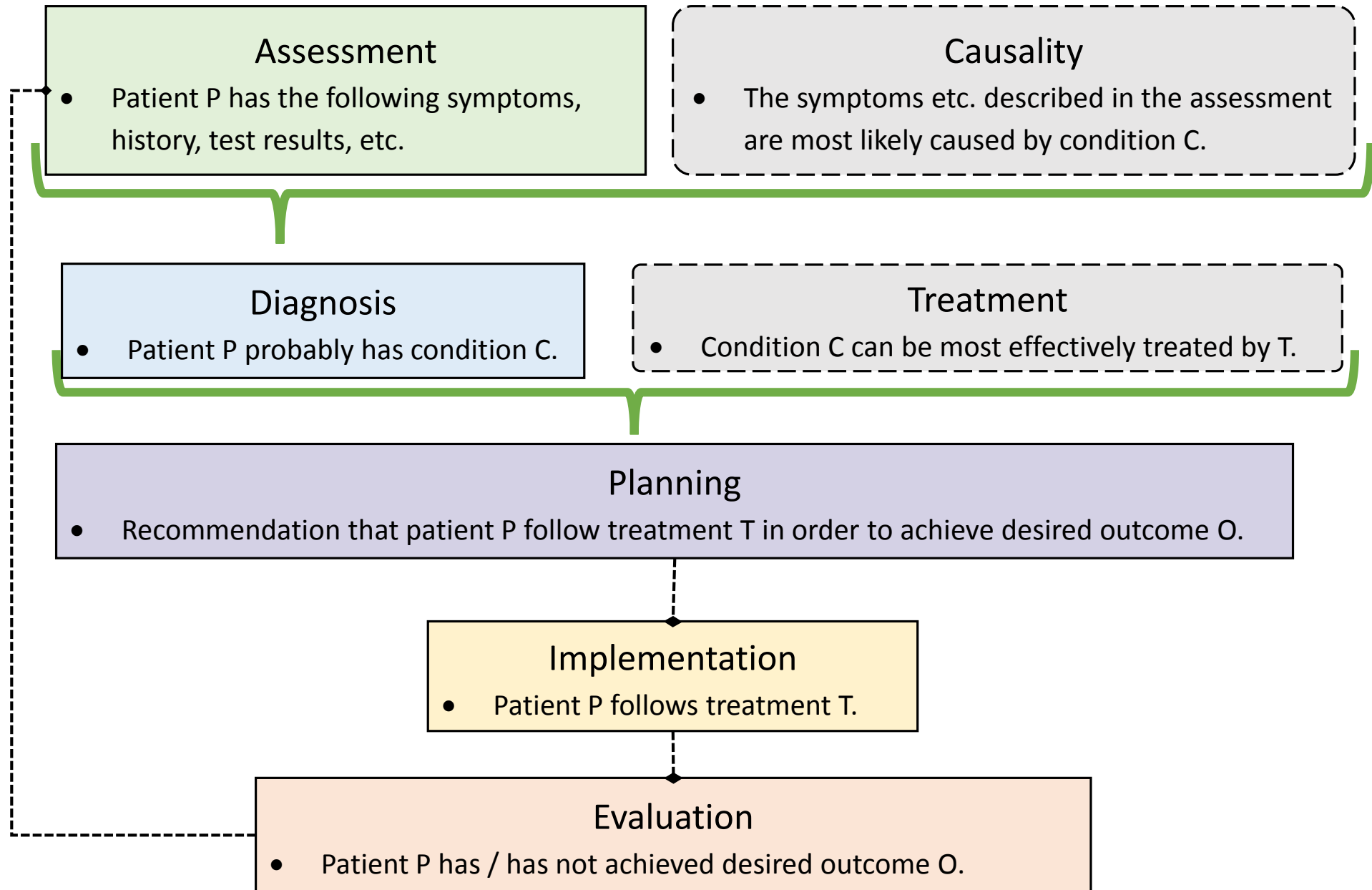


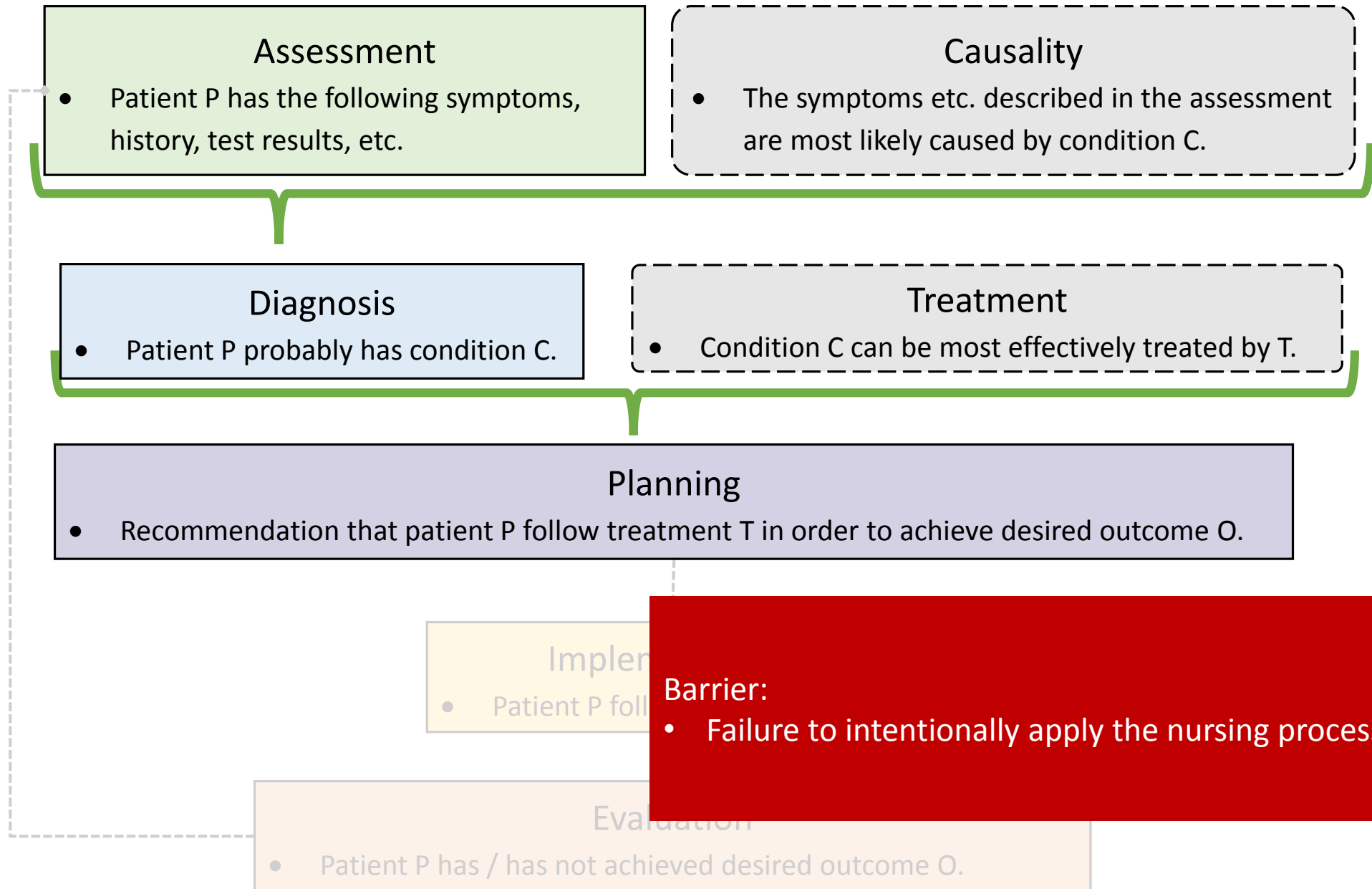


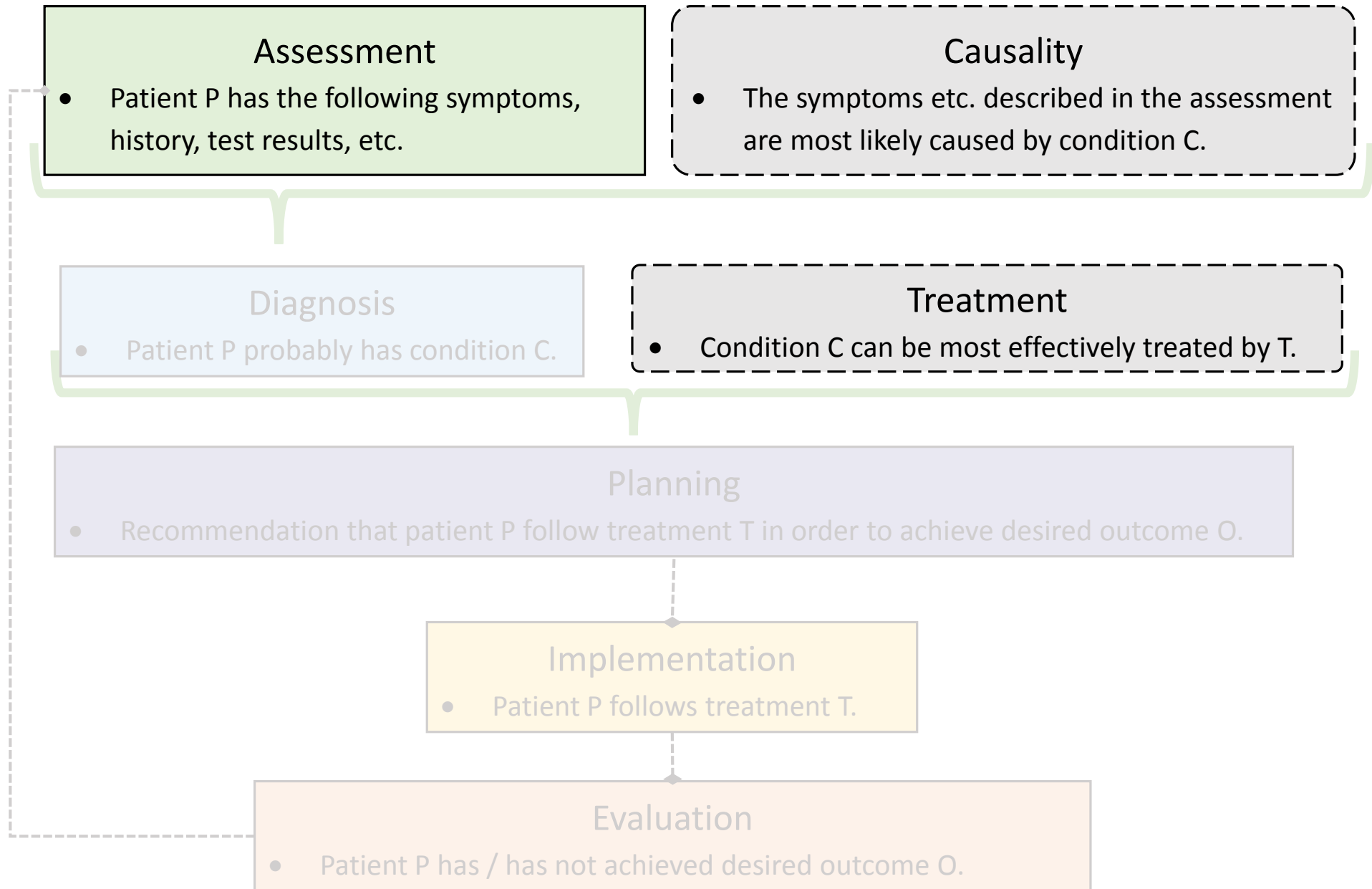
Critical Thinking and Visual Thinking in the Health Sciences

The Nursing Process

Barriers to Implementing Nursing Process







Assessment

- Patient P has the following symptoms, history, test results, etc.

- Information gathered by asking questions, reviewing documentation, etc.
- Knowledge that may be represented in a concept map can generate new questions.

- Lack of time.
- Incomplete knowledge.
- Incomplete attention.
- Assuming that you already know.
- Not asking enough questions.
- Not asking the right questions.
- Others?

Causality

- The symptoms etc. described in the assessment are most likely caused by condition C.

- Determined by applying knowledge that may be represented in a concept map.

- Lack of time.
- Incomplete knowledge.
- Failure to consider other options (and so run other tests).
- Fallacy of assuming the conclusion.
- Others?

Treatment

- Condition C can be most effectively treated by T.

- Determined by applying knowledge that may be represented in a concept map.

- Lack of time.
- Incomplete knowledge.
- Failure to consider other options.
- Failure to consider consequences of treatment.
- Failure to consider patient preference.
- Others?

EXAMPLE

The patient had been working in backyard and found several ticks. A few days later, she noticed a bite, which appeared as a red, raised welt, with a radiating red halo. The patient had lost her appetite, felt feverish, and experienced difficulty breathing.



Assessment

- Had been working in backyard
- Found several ticks
- Had a bite, red, raised welt, with a radiating red halo
- Lost her appetite, felt feverish, and difficulty breathing



Assessment

- Had been working in backyard
- Found several ticks
- Had a bite, red, raised welt, with a radiating red halo
- Lost her appetite, felt feverish, and difficulty breathing

Causality

- The symptoms are most likely caused by Lyme's disease born by a deer tick.

Diagnosis

- Lyme's disease

Assessment

- Had been working in backyard
- Found several ticks
- Had a bite, red, raised welt, with a radiating red halo
- Lost her appetite, felt feverish, and difficulty breathing

Causality

- The symptoms are most likely caused by Lyme's disease born by a deer tick.

Diagnosis

- Lyme's disease

Treatment

- Lyme's disease can be effectively treated with amoxicillin.

Planning

- Patient should take amoxicillin.

Implementation

- Patient took amoxicillin.



Assessment

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Evaluation

- Three days later, patient admitted to emergency room with multisystem organ failure: heart, kidneys, lungs

Hospitalist sought causation for organ failure by running an tests and asking more thorough questions (including questions about travel).

Diagnostic bloodwork identified ehrlichiosis rather than Lyme's, contacted from a rocky mountain spotted tick during a visit to an area where those ticks are common.

This generated a different treatment plan using doxycycline.

Patient left hospital under own power 7 days later.

Evaluation

- Three days later, patient admitted to emergency room with multisystem organ failure: heart, kidneys, lungs

Assessment

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Lyme's

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Critical Thinking and Visual Thinking in the Health Sciences

The Nursing Process

Barriers to Implementing Nursing Process

Responses to Barriers

Metacognition

Lunch Time!

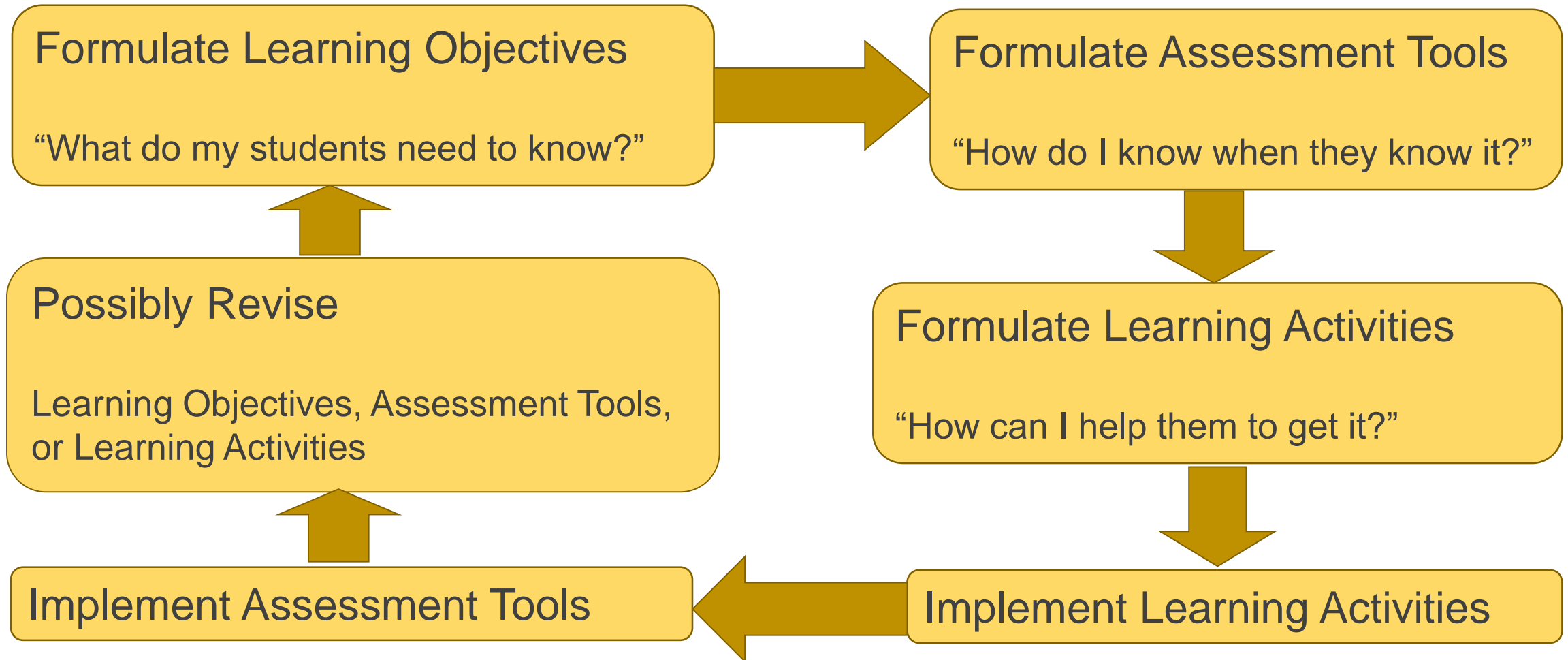
What this Means for You

Learning Outcomes in your Classroom

Assessment Tools in your Classroom

Learning Activities in your Classroom

The Backward Design Cycle



Discussion

What challenges might you face?

How can you use this methodology in your classes?

Some Assembly Required

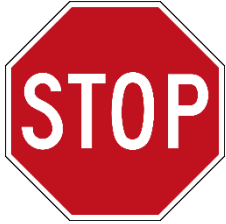
Working on your Courses

Reporting Back

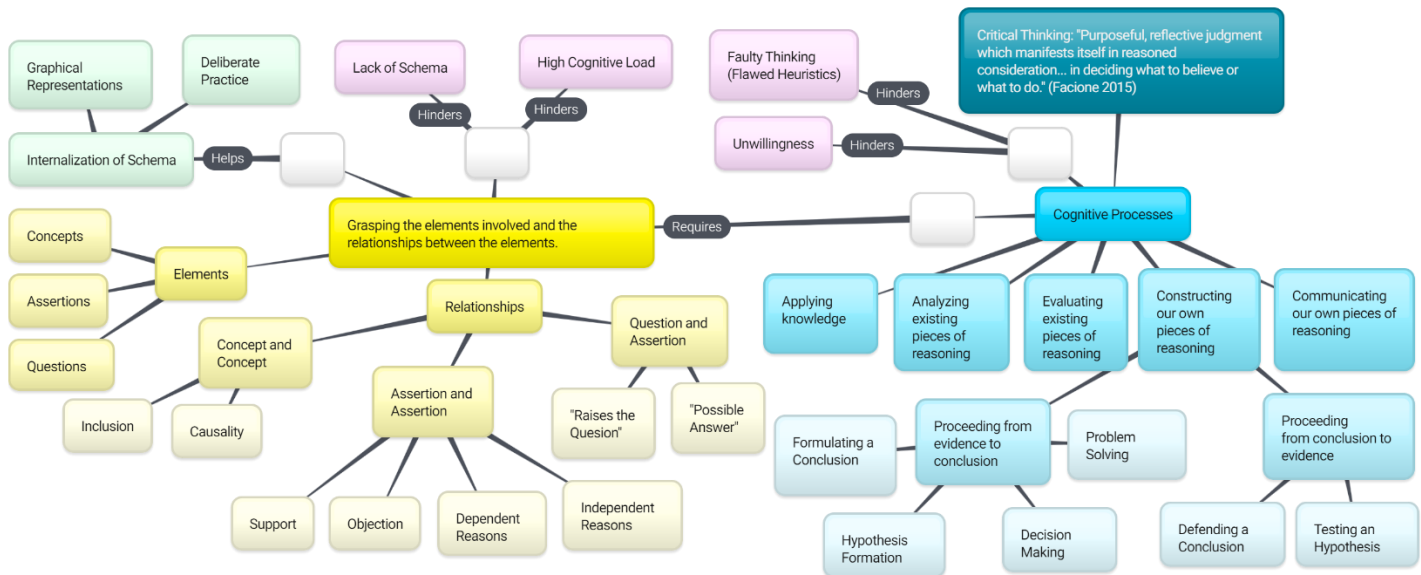
- Bubbl.us <https://bubbl.us/>
- MindMup <https://www.mindmup.com/>
- bCisive <https://www.bcisiveonline.com/>
- Rationale <https://www.rationaleonline.com/>
- TruthMapping <https://www.truthmapping.com/#cat=3>

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The University of Wisconsin-Stevens Point



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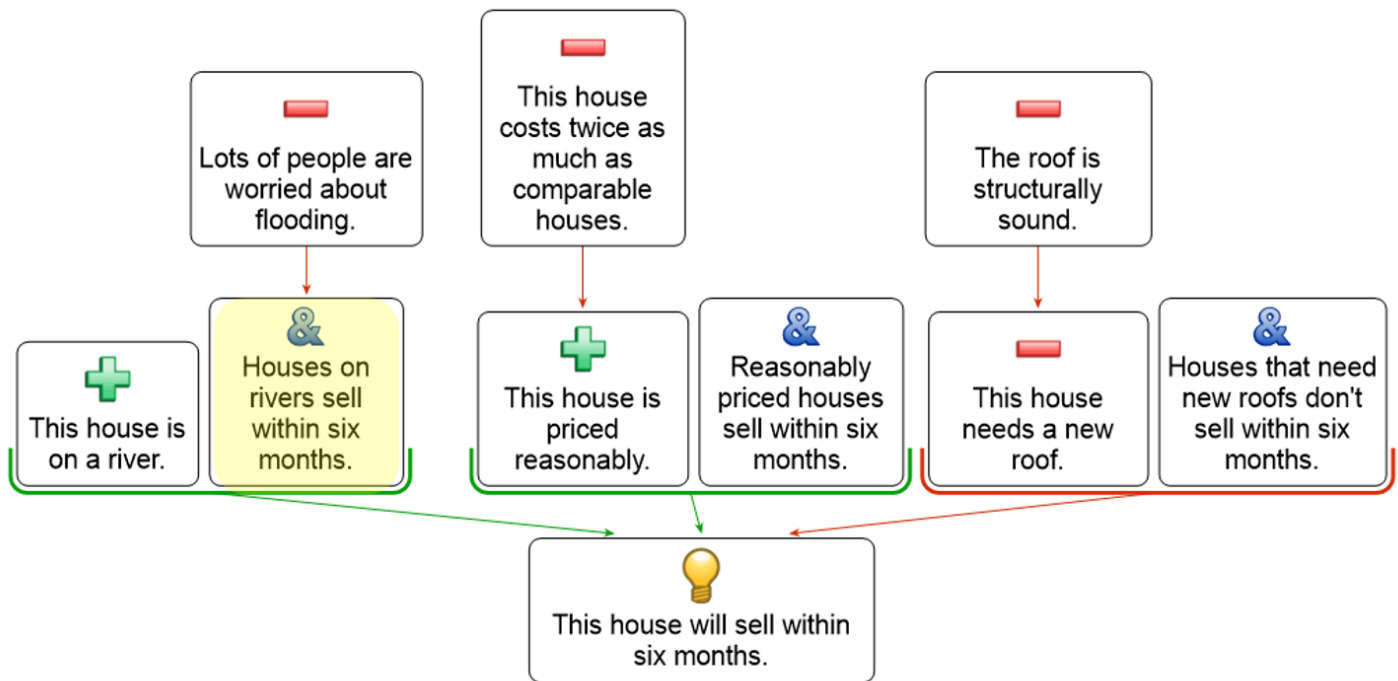


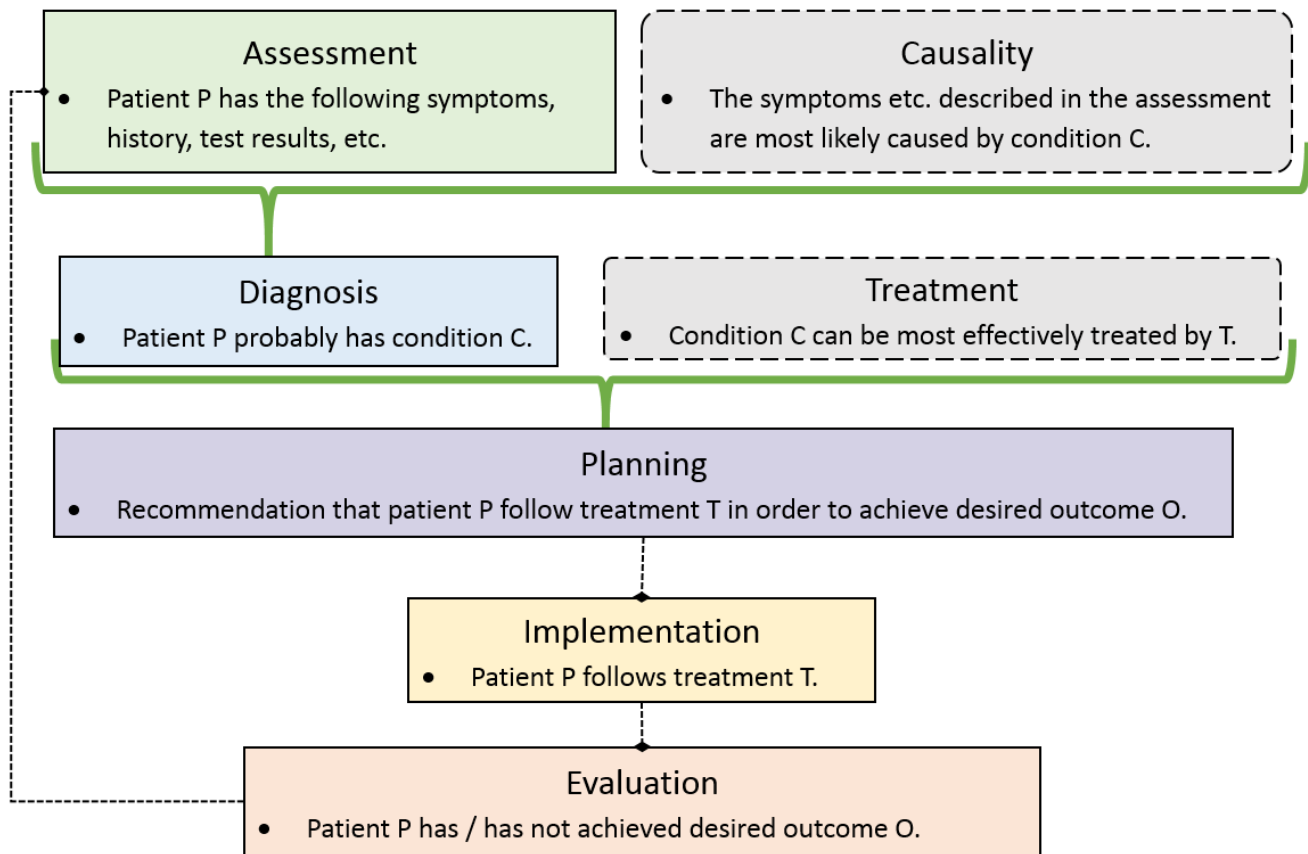
"I think my house will sell within six months. After all, it's on a river. Of course, lots of people are worried about flooding. My nasty neighbor thinks that my house is priced twice as high as comparable houses, but I think it's priced reasonably, and reasonably priced houses always sell quickly. My husband claims that our house needs a new roof, and of course houses that need new roofs stay on the market longer, but as far as I can see, our roof is structurally sound."



Please Do Not Turn over Page Until Instructed. 😊

“I think my house will sell within six months. After all, it’s on a river. Of course, lots of people are worried about flooding. My nasty neighbor thinks that my house is priced twice as high as comparable houses, but I think it’s priced reasonably, and reasonably priced houses always sell quickly. My husband claims that our house needs a new roof, and of course houses that need new roofs stay on the market longer, but as far as I can see, our roof is structurally sound.”





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Causality <ul style="list-style-type: none"> • The symptoms etc. described in the assessment are most likely caused by condition C. 	<ul style="list-style-type: none"> • Determined by applying knowledge that may be represented in a concept map. 	<ul style="list-style-type: none"> • Lack of time. • Incomplete knowledge. • Failure to consider other options (and so run other tests). • Fallacy of assuming the conclusion. • Others?
Treatment <ul style="list-style-type: none"> • Condition C can be most effectively treated by T. 	<ul style="list-style-type: none"> • Determined by applying knowledge that may be represented in a concept map. 	<ul style="list-style-type: none"> • Lack of time. • Incomplete knowledge. • Failure to consider other options. • Failure to consider consequences of treatment. • Failure to consider patient preference. • Others?

- Bubbl.us <https://bubbl.us/>
- MindMup <https://www.mindmup.com/>
- bCisive <https://www.bcisiveonline.com/>
- Rationale <https://www.rationaleonline.com/>
- TruthMapping <https://www.truthmapping.com/#cat=3>