

Developing students' critical thinking in ELC courses

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Integrating **critical thinking** into English teaching



If you are going to develop students' **critical thinking** in your teaching, what could be **three words** that come to mind?



Post your words in **YoTeach!** by searching for **CritThink3Words** or scan the QR code.

CONSIDER DIFFERENT VIEWPOINTS

What's another angle on this?

REASON WITH EVIDENCE

Why do you think so?

MAKE CONNECTIONS

How does this fit what you already know?

WONDERING

What are you curious about here?

The **UNDERSTANDING** Map

UNCOVERING COMPLEXITY

What lies beneath the surface of this?

DESCRIBE WHAT'S THERE

What do you see and notice?

CAPTURE THE HEART & FORM CONCLUSIONS

What's at the core or centre of this?

BUILD EXPLANATIONS

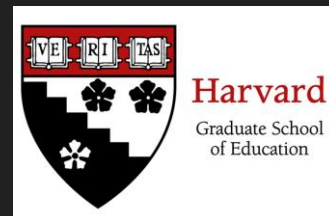
What's really going on here?

Visible Thinking & Visible Thinking Routines

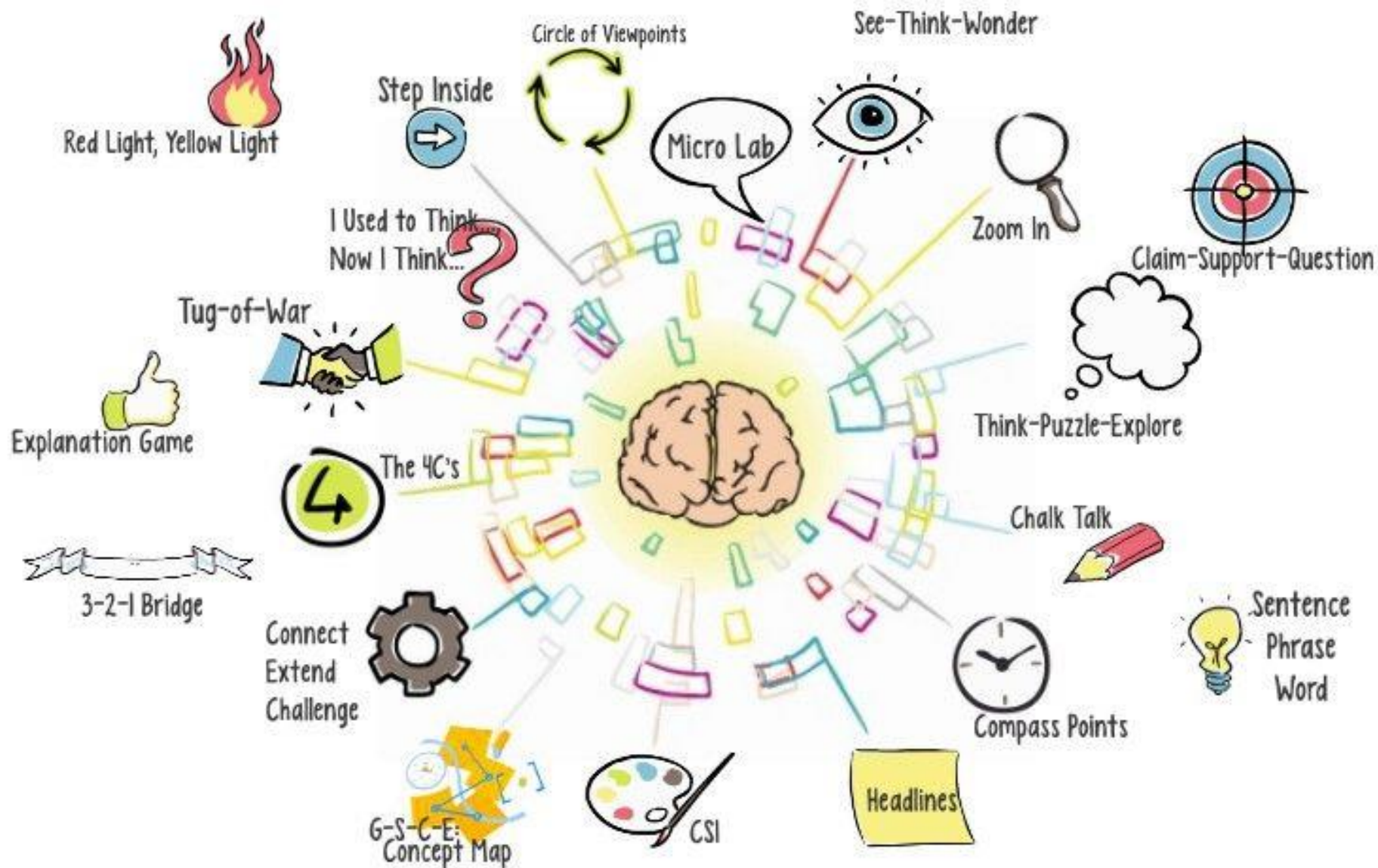
- ❖ “... a key focus of Project Zero conducted by the Harvard Graduate School of Education, aims to foster an **active** and **collaborative learning environment** by increasing opportunities for **genuine critical enquiry** in class and creating a **culture of thinking** among learners.”
- ❖ ... simple **structures or patterns** of action, such as a set of questions or a short sequence of steps, which can be integrated into **class activities and content** as teaching and learning tasks.

Website for visible thinking & routines:

http://www.visiblethinkingpz.org/VisibleThinking_html_files/VisibleThinking1.html



VISIBLE THINKING ROUTINES



Two Projects

Project 1 (Two Years)

Investigating whether Visible Thinking (VT) routines can help develop students' **critical thinking** skills:

1. How can VT routines **be applied** in an EAP course to develop students' critical thinking skills?
2. What **factors** might impact the application of VT in an EAP course?
3. What are the **benefits** of applying VT routines in the EAP/EFL classroom? To what extent does it advance students' critical enquiry and engagement with the course?

Project 2 (One Semester)

Investigating the **language needs** of students in expressing themselves in English while engaged in critical thinking:

1. Does students' **ability to express** themselves critically in English improve during a semester of embedded critical language instruction in ELC courses?
2. Does students' **ability to apply** key critical thinking principles and processes in responding to written, oral, and visual texts improve during a semester of embedded critical thinking instruction in ELC courses?
3. What **techniques** can instructors use to effectively embed critical thinking language instruction within the existing materials of ELC courses?

VT Routines for this project

What Makes You Say That?	Interpretation with justification routine
See Think Wonder	A routine for exploring works of art, but can be translated into EAP context as similar principles can be applied to academic argument analysis
Generate, Sort, Connect, Elaborate	A routine for organizing one's understanding of a topic through concept mapping
True for Who?	A routine for considering viewpoints on truth
Colour, Symbol, Image	A routine for distilling the essence of ideas non-verbally
3-2-1 Bridge	A routine for activating prior knowledge and making connections
Think-Pair-Share	A routine for active reasoning and explanation
I Used to Think... Now I Think ...	A routine for reflecting on how and why our thinking has changed
Tug of War	A routine for exploring the complexity of fairness dilemmas which can be used to encourage students to reason carefully about the "pull" of various factors that are relevant to a dilemma of fairness
Red Light & Yellow Light	A routine focusing students on signs of puzzles of truth

Self-Assessment of Critical Thinking

Please indicate how confident you are in performing the following actions by choosing an appropriate number on the scale. All responses are anonymous.

	1= not confident at all.....6= very confident					
1. expressing your own thinking, ideas and beliefs clearly and accurately	1	2	3	4	5	6
2. making careful observations of a thing, person, or situation	1	2	3	4	5	6
3. analysing a topic or concept to deepen your understanding	1	2	3	4	5	6
4. identifying factors that impact on an issue	1	2	3	4	5	6
5. providing strong evidence for your conclusions and opinions	1	2	3	4	5	6
6. questioning information you receive from other people and the media	1	2	3	4	5	6
7. making logical connections among information, facts, and ideas	1	2	3	4	5	6
8. seeing a situation from different points of view or perspectives	1	2	3	4	5	6
9. evaluating how reliable or trustworthy a source of information is	1	2	3	4	5	6
10. understanding the main idea or essence of an argument or opinion	1	2	3	4	5	6
11. judging how strong an argument or opinion is	1	2	3	4	5	6
12. evaluating and reflecting on your own thinking, ideas and beliefs	1	2	3	4	5	6

Some examples ...

- What makes you say that?
- Key questions for critical thinking
 - Tug for truth/Tug of War

What makes you say that?

Task: Preparing students for a job interview

Step 1: Brainstorm 3 qualities/adjectives you may have that are useful to be a successful job applicant

Step 2: Write down the three qualities/adjectives on a piece of paper

Step 3: Show it to your neighbours and promote yourself as a job applicant

Step 4: Answer questions that your neighbours may have regarding your qualities

What makes you say that?

Observations:

- Job applicants did not think thoroughly as they prepared their qualities
- Weak correlations between what they did and what they claimed to be
- Missing information

Usefulness of the VTR:

- Encouraging evidence-based reasoning
- Bridging the information gap between the interviewee and interviewer

Key questions for critical thinking

2. Think a bit

Salary being equal, rank the following factors for choosing an employer from 1 (most important) to 10 (least important) according to your view.

The company...

- | | | | |
|---|--|---|--|
| a | offers high quality products/services. | f | is admired by the general public. |
| b | provides opportunities for international travel. | g | allows for flexibility in working hours/working at home. |
| c | has paths to management and leadership roles. | h | has a strong sense of purpose beyond making money. |
| d | has a positive impact on society. | i | assigns work that is meaningful to you. |
| e | delivers professional development training programs. | j | promotes a good work/life balance. |

Some key questions for critical thinking

- “What might be missing here?”
- “How far can I trust this information?”
- “Who is likely to benefit?”
- “To what degree could cultural background play a role here?”
- “What is the middle ground here?”

Tug for Truth/Tug of War

- Critical thinking **objectives**:
 - Identifying different **factors** by analysing an issue from different perspectives and stakeholders
 - Exploring the **complexity** for decision making
- Linked **activities**: Activity 14 & 15, Unit 1, **ELC1014**

Tug for Truth/Tug of War

Activity 14 Finding sources: hands on!

*In your groups **choose one topic** from the list below, decide a position and then search for 2 academic journal articles for your topic:*

- Home schooling
- Teenage cosmetic surgery
- Selling organs for transplantation
- Euthanasia
- E-waste
- Net neutrality
- Anorexia in young males

Activity 15 Discussion practice #2

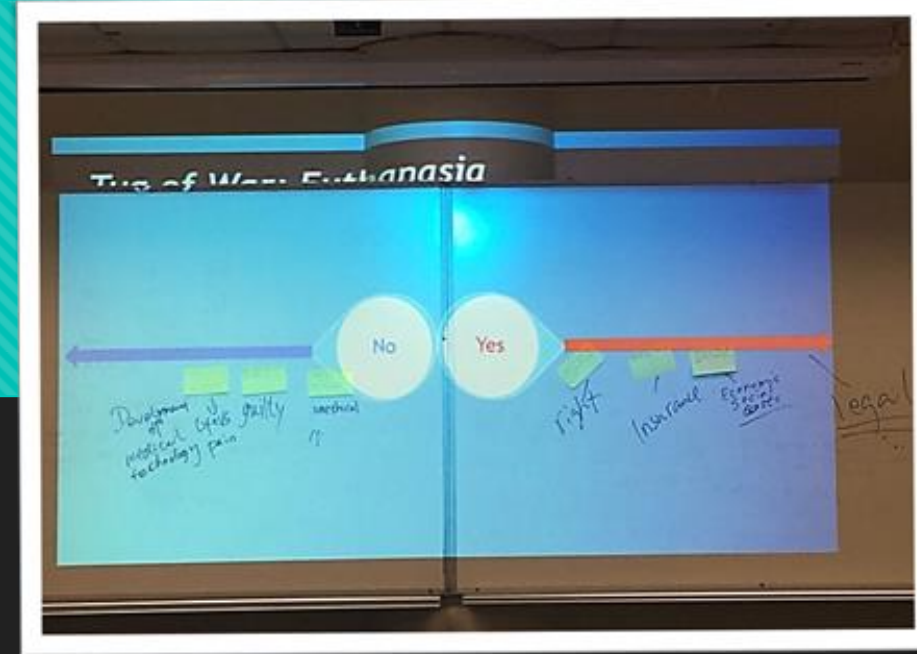
*Form a group of 3-4 students. You are going to hold a ten-minute discussion. Divide your group so that some of you **defend** the position on the topic and others **attack** the position. You do not need to reach a conclusion – focus on the **depth** of the discussion. You have 6 minutes to prepare by yourself.*

1. You should try to consider what your position is and then think about the perspectives by using the perspectives of argument diagram on p. 13 – can you use any of them to discuss this question or narrow down your main arguments?
2. Can you use any of the data from the sources you found in the previous activity?
3. Make some brief notes to help you in the discussion (bullet points, not complete sentences) in the box below.

Tug for Truth/Tug of War

- Revised activity with Tug of War

- The class will choose one of the listed topics listed in Activity 14 into a debatable statement; for example, “**The government should legalize euthanasia**”.
- Students in groups of 3-4 first take a position. They are given Post it Notes to be stuck on the whiteboard in the appropriate Yes/No position. They write a claim per Post it Note and state which form of evidence is appropriate, for example, statistics.
- Next, students will be asked, “Which is the strongest claim? Why?” The class should discuss why certain claims should start first.



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Sourced from: The Cultures of Thinking project at Project Zero, Harvard Graduate School of Education.

Practice

How to apply the Understanding Map in your teaching?

The Essay

Read through the essay and try to come up with some **activities** that promote critical thinking (see the Understanding Map).

Discuss your ideas in pairs.

Suggested activities

- Colour, Symbol, Image (CSI)
- True for Who?
- I used to think ..., but now I think ...

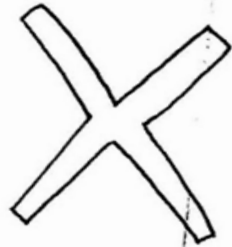
Pesticides: Colour, Symbol, Image

Describe or draw your choice of colour, symbol, and image in relation to main ideas from the essay draft on pesticide use.

Colour

Grey

Symbol



Image



The Earth is Sick.

Reason:

Although people have pointed out the benefits of the pesticides, the advantages are not guaranteed and the measure methods are not reliable. They are not making the argument based on a strong evidence.

Reason:



The use of pesticides is very harmful to human bodies. It does not only pose negative effects on present generation, but also the next generations.

Reason:

The use of pesticides poses serious harms on the ecosystem. As the animal species, including humans, are closely linked in the food chain, chain reactions happen and the whole ecosystem is damaged. The Earth is in a dangerous situation and unstable status.

Pesticides: Colour, Symbol, Image

Describe or draw your choice of colour, symbol, and image in relation to main ideas from the essay draft on pesticide use.

Colour	Symbol	Image
Green	 <p>CAUTION</p>	<p>The image shows a agricultural worker spraying pesticides with masks, gloves, and protective clothing.</p> 
<p>Reason: The colour Green can refer to the vegetation grown, as well as the positive impacts that using pesticides can bring.</p>	<p>Reason: Although some academic studies shows that pesticides poses little harm to human health, the information in this area is incomplete and we should still hold a cautious attitude.</p>	<p>Reason: other studies believe that pesticides are harmful. ^{The picture coincides} with the point that pregnant women exposed to pesticides may develop metabolic disorders.</p>

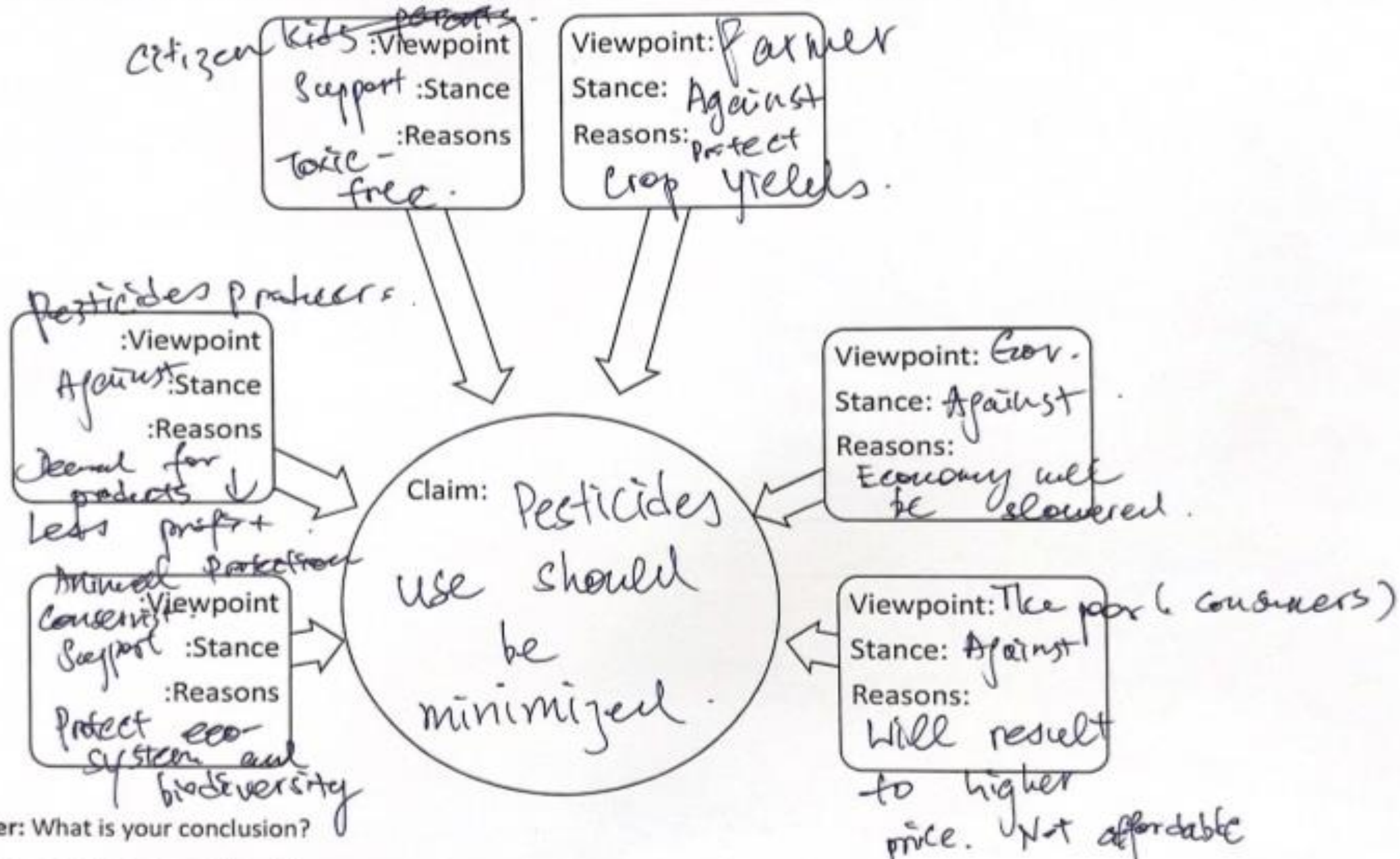
Made by The Visible Thinking Project/ELC, PolyU/2017

Conclusion

To conclude, pesticides can bring positive impacts to the economy as well as the society in both the short-term and the long-term. Field insects are controlled while the spread of certain diseases are controlled. There are also studies that shows pesticides are relatively safe for consumption. However, other researchers believe that pesticides are rather harmful, especially for those exposed to pesticide. The ~~been~~ effects include irreversible harm done to the DNA. On the whole, pesticides have its benefits and it is difficult to abandon its usage in the short-term. It should be an aspect for us to consider ^{that} the use of pesticides with few harms to human.

True for Who?

Write down your claim. Make a list of all the different points of view that you could look at this claim from. Is it true? False? Uncertain? Why?



Think and answer: What is your conclusion?

Pesticides: I used to think... Now I think...

Reflect on your ideas about pesticide use and complete the table according to instructions. Please support your views with reasons and examples.

I used to think ...	Now I think ...	Why? (Reasons or examples)
<p>Although pesticides are harmful to human and animal health, I still support the use of some types of pesticides (those do not pose serious health problems).</p> <p>Pesticides improve crop productions. Huge human population requires large amount of food so using pesticides can ensure there is enough food production.</p>	<p>Now I think even though pesticides should not be banned, there are other alternatives to help increasing the production of food.</p>	<p>Considering sustainability, using alternative ways such as rotational farming (farming circle) are more environmental-friendly methods to produce more food. Hence, even though we still use pesticides, we should try to use and develop new technologies to increase food.</p>

Routines:

Step Inside
Circle of Viewpoints
See-Think-Wonder
I Used to Think and Now I Think...
Compass Points
Explanation Game
Tug of War
Color-Symbol-Image
Peel the Fruit

Routines:

Step Inside
Tug of War
Sentence-Phrase-Word
Generate-Sort-Connect-Elaborate
Circle of Viewpoints
Peel the Fruit

Routines:

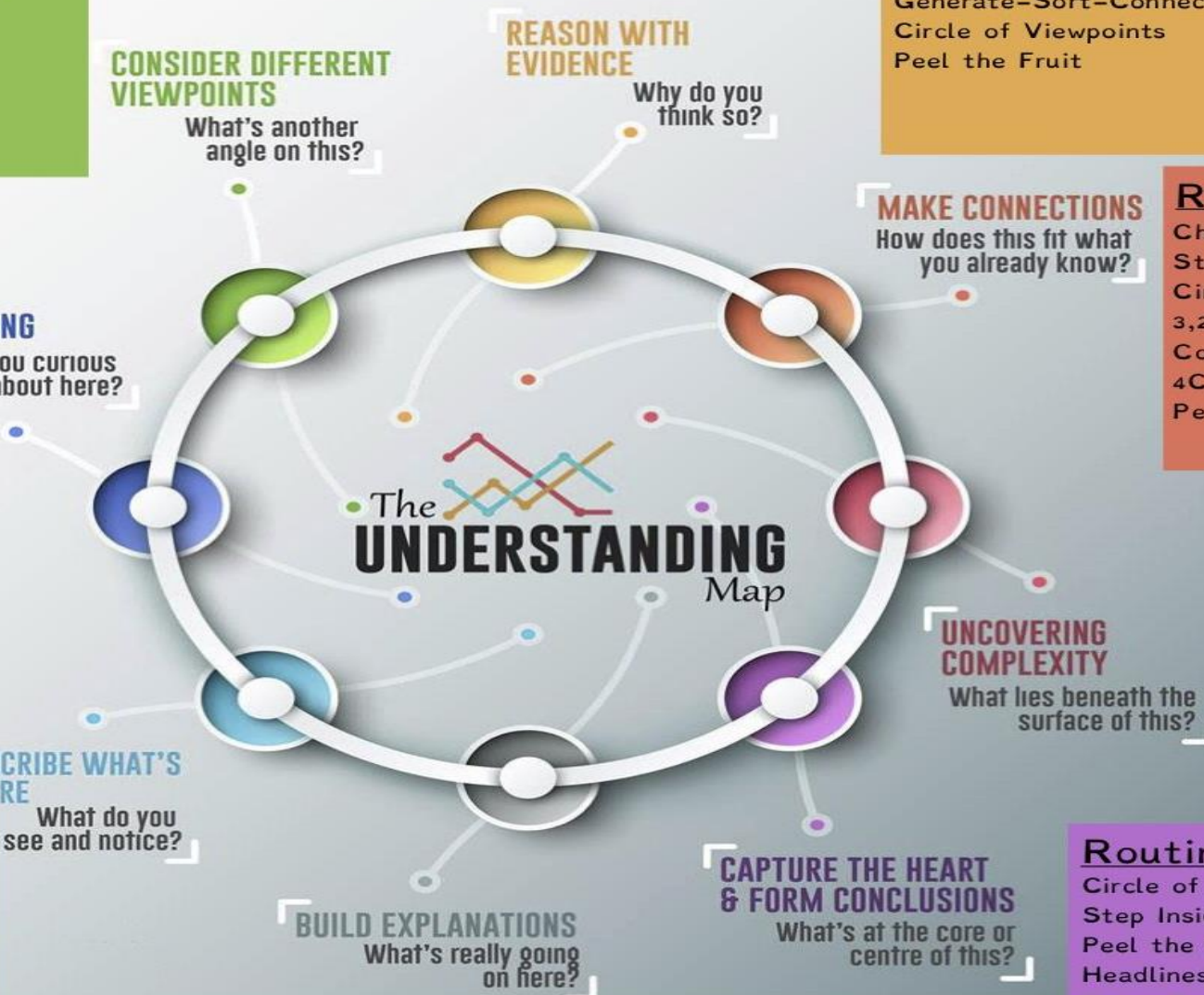
Chalk Talk
Step Inside
Circle of View Points
3,2,1 Bridge
Compass Points
4Cs (Connect-Challenge-Concept-Change)
Peel the Fruit

Routines:

See-Think-Wonder
Tug of War
Zoom In
Sentence-Phrase-Word
Claim-Support-Question
Red Light, Yellow Light
Step Inside
I Used to Think and Now I Think...
Generate-Sort-Connect-Elaborate

Routines:

Circle of Viewpoints
Step Inside
Peel the Fruit
Headlines
Color-Symbol-Image
Tug of War
4Cs (Connect-Challenge-Concept-Change)
Zoom In



Routines:

See-Think-Wonder, Zoom In, Generate-Sort-Connect-Elaborate
Think-Pair-Share, I Used to Think and Now I Think...
The Explanation Game, Connect-Extend-Challenge, MicroLab,
Claim-Support-Question, Peel the Fruit

Routines:

See-Think-Wonder
Zoom In
3,2,1 Bridge
Think-Puzzle-Explore
Chalk Talk
Compass Points
Explanation Game
Step Inside

Routines:

See-Think-Wonder
Zoom In
Step Inside
3,2,1 Bridge
I Used to Think and Now I Think...
Chalk Talk
Peel the Fruit



Any questions?

