Geography through enquiry

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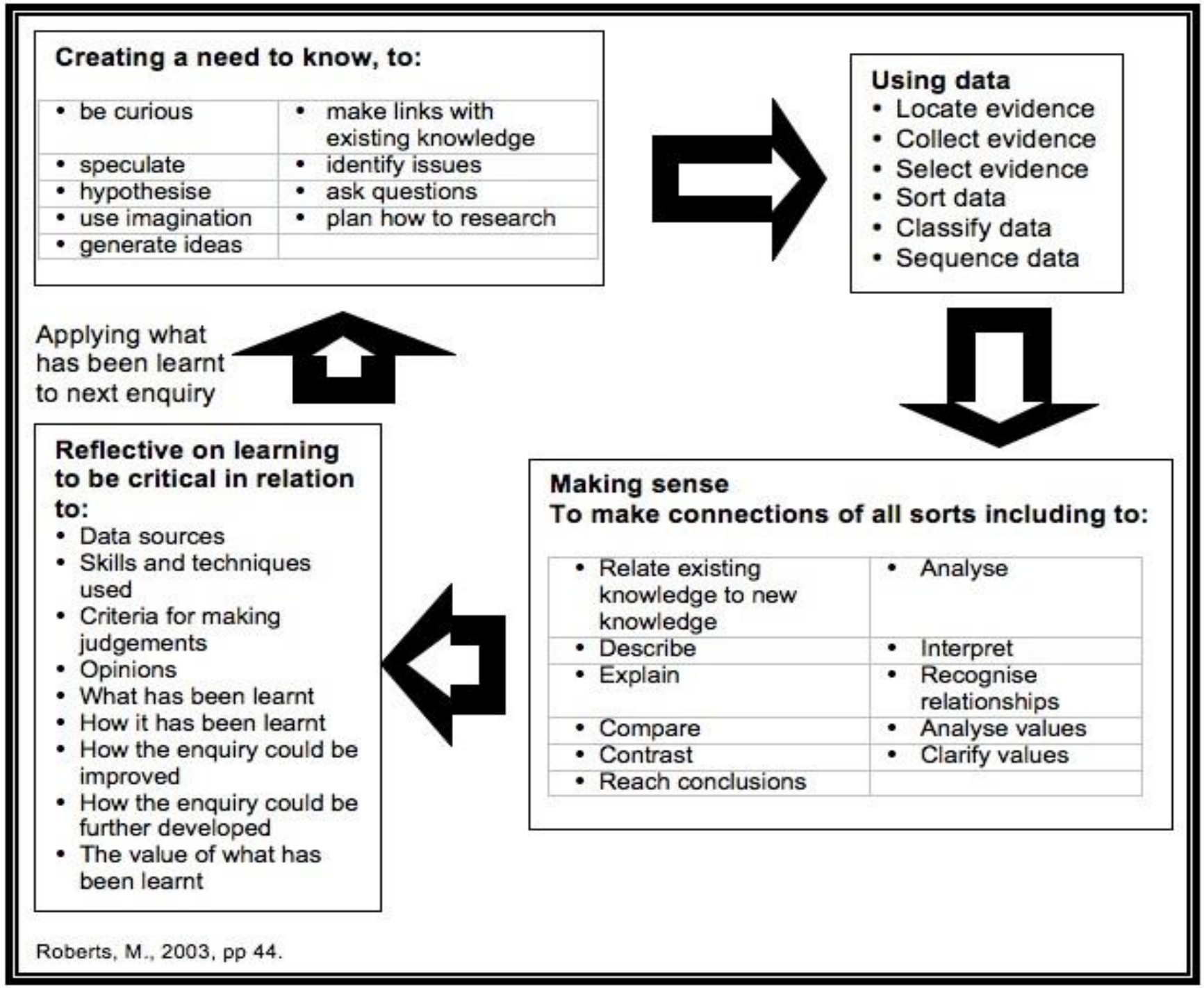
What do I mean by ‘enquiry’?

A range of approaches to teaching and learning in which students are actively engaged in investigating geographical questions and issues.

It includes enquiries that are strongly guided by teachers as well as those in which students have more independence.

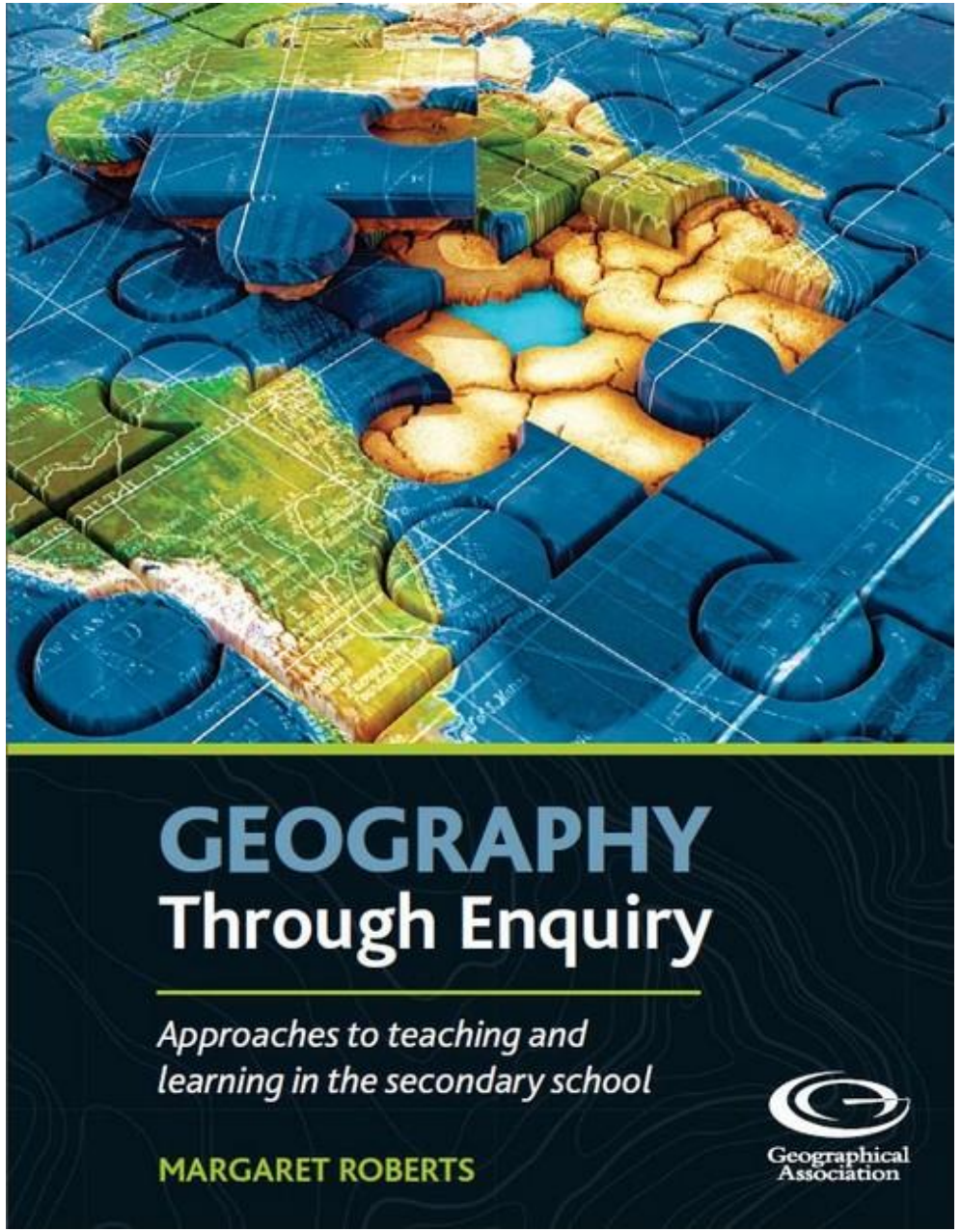
It is about developing a questioning attitude to geographical knowledge and enabling students to investigate that knowledge critically and to think geographically.



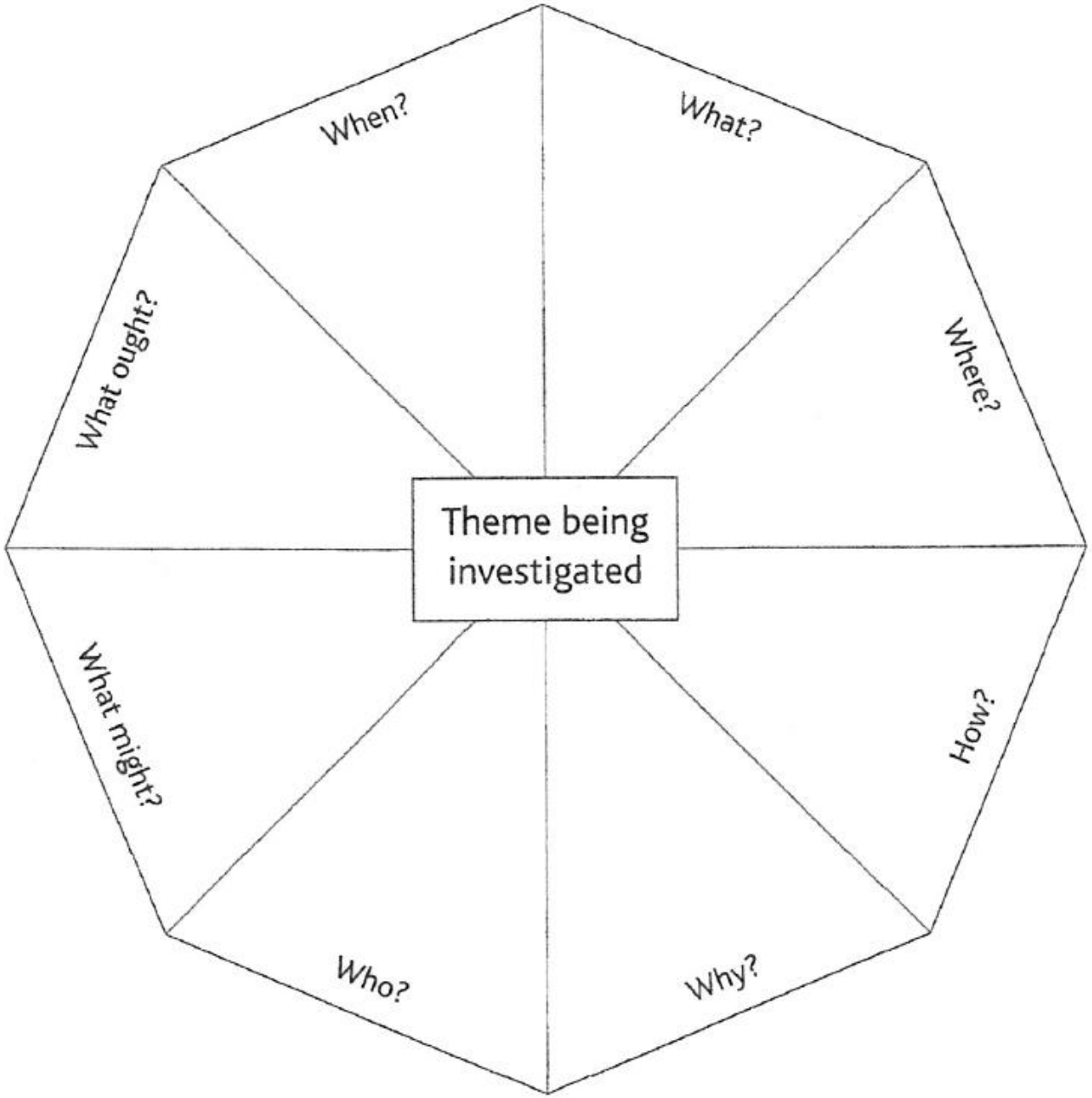
Roberts, M., 2003, pp 44.

Essential elements of enquiry

- Creating a need to know
- Using geographical sources as evidence
- Making sense of geographical information: thinking geographically
- Reflecting on learning



Geographical questions 7ws and an H



How do we create a need to know (spark curiosity)?

- [Foto dochter]

Stance

Stimulus

Speculation

Choice

Motivating activity/outcome

Creating a need to know: intelligent guesswork

Life expectancy

The average number of years that a new-born child could expect to live, if he or she were to pass through life exposed to the sex-and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory or geographic area. (WHO website)

Which countries have the highest and lowest life expectancy at birth? (top and bottom 3?)

- Australia
- Bangladesh
- Bolivia
- China
- Ethiopia
- Indonesia
- Italy
- Japan
- Mexico
- Netherlands
- Poland
- Russian Federation
- Saudi Arabia
- Sierra Leone
- Singapore
- South Africa
- Suriname
- Swaziland
- United Kingdom
- USA

Country	Life expectancy	Rank	Country	Life expectancy	Rank
Australia	83	=2	Poland	77	
Bangladesh	70		Russian Federation	69	
Bolivia	68		Saudi Arabia	76	
China	75		Sierra Leone	46	20
Ethiopia	64		Singapore	83	=2
Indonesia	71		South Africa	59	18
Italy	83	=2	Suriname	77	
Japan	84	1	Swaziland	54	19
Mexico	76		United Kingdom	81	
Netherlands	81		USA	79	

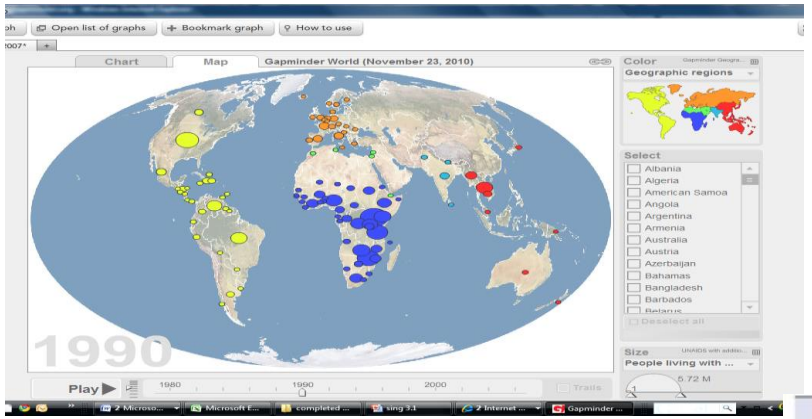
Intelligent guesswork

Purposes

For the teacher to:

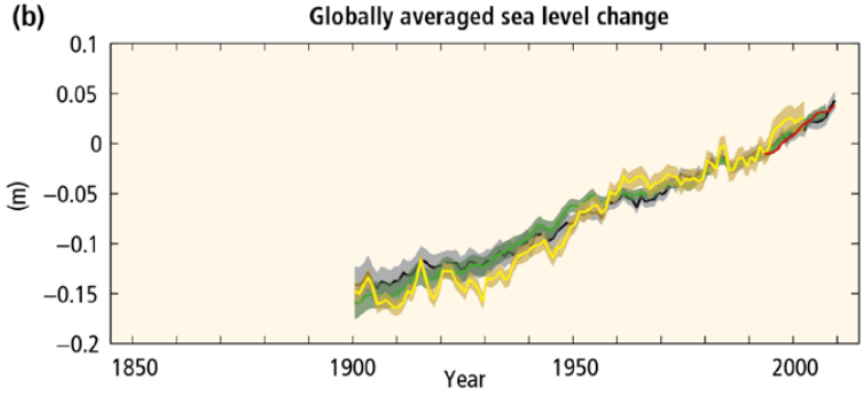
- create a need to know – to spark curiosity
- elicit students' prior knowledge and understanding
- deal with misconceptions and stereotyping

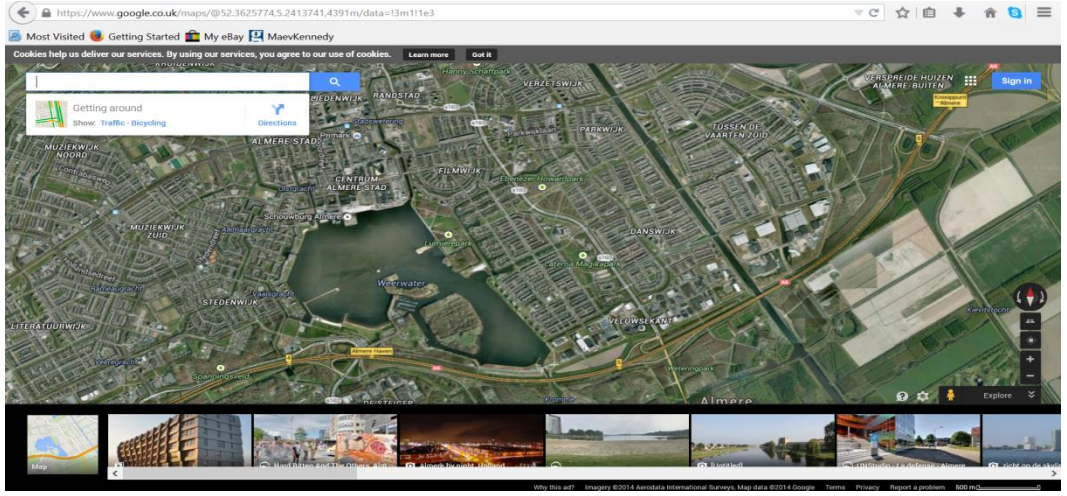
Using sources as evidence

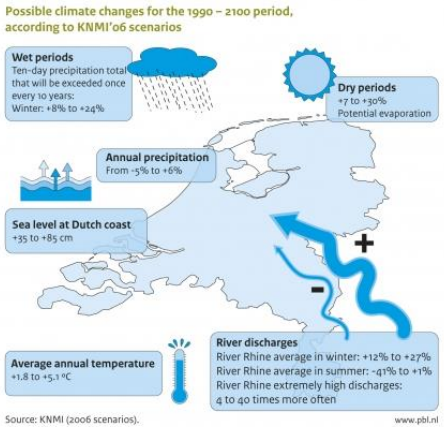


	Production (million toe)		Analysis by energy type (excluding heat), 2009 (%)				
	2000	2009	Coal and lignite	Crude oil	Natural gas	Nuclear energy	Renew-ables & waste
EU-27 (1)	940.6	830.9	19.6	11.7	18.8	28.5	21.4
Argentina	:	80.8	0.1	43.7	46.0	2.6	7.6
Australia (2)	233.6	324.0	76.2	8.2	13.3	0.0	2.4
Brazil	148.3	230.3	1.0	45.1	4.3	1.5	48.1
Canada (2)	372.7	395.8	8.1	40.1	34.7	6.0	11.1
China	1 064.0	2 084.9	73.8	9.1	3.4	0.9	12.8
India	366.4	502.5	48.6	7.7	7.7	1.0	35.1
Indonesia	236.3	351.8	47.4	13.7	19.1	0.0	19.9
Japan (2)	105.8	95.1	0.0	0.8	3.7	77.7	17.8
Mexico (2)	222.3	217.7	2.3	71.4	17.4	1.2	7.6
Russia	978.0	1 181.6	13.0	41.8	39.7	3.6	1.8
Saudi Arabia	:	528.4	0.0	88.4	11.6	0.0	0.0
South Africa	145.6	160.6	88.2	0.1	0.5	2.1	9.1
South Korea (2)	34.4	44.6	2.6	1.6	1.0	86.9	7.7
Turkey (2)	25.9	30.3	57.5	7.8	1.9	0.0	32.8
United States (2)	1 667.3	1 740.9	31.4	20.0	28.4	12.8	7.4
World	9 992.9	12 268.2	28.1	32.5	20.6	5.7	13.2

(1) Data for 2010 instead of 2009.
(2) Production total for 2010 instead of 2009.



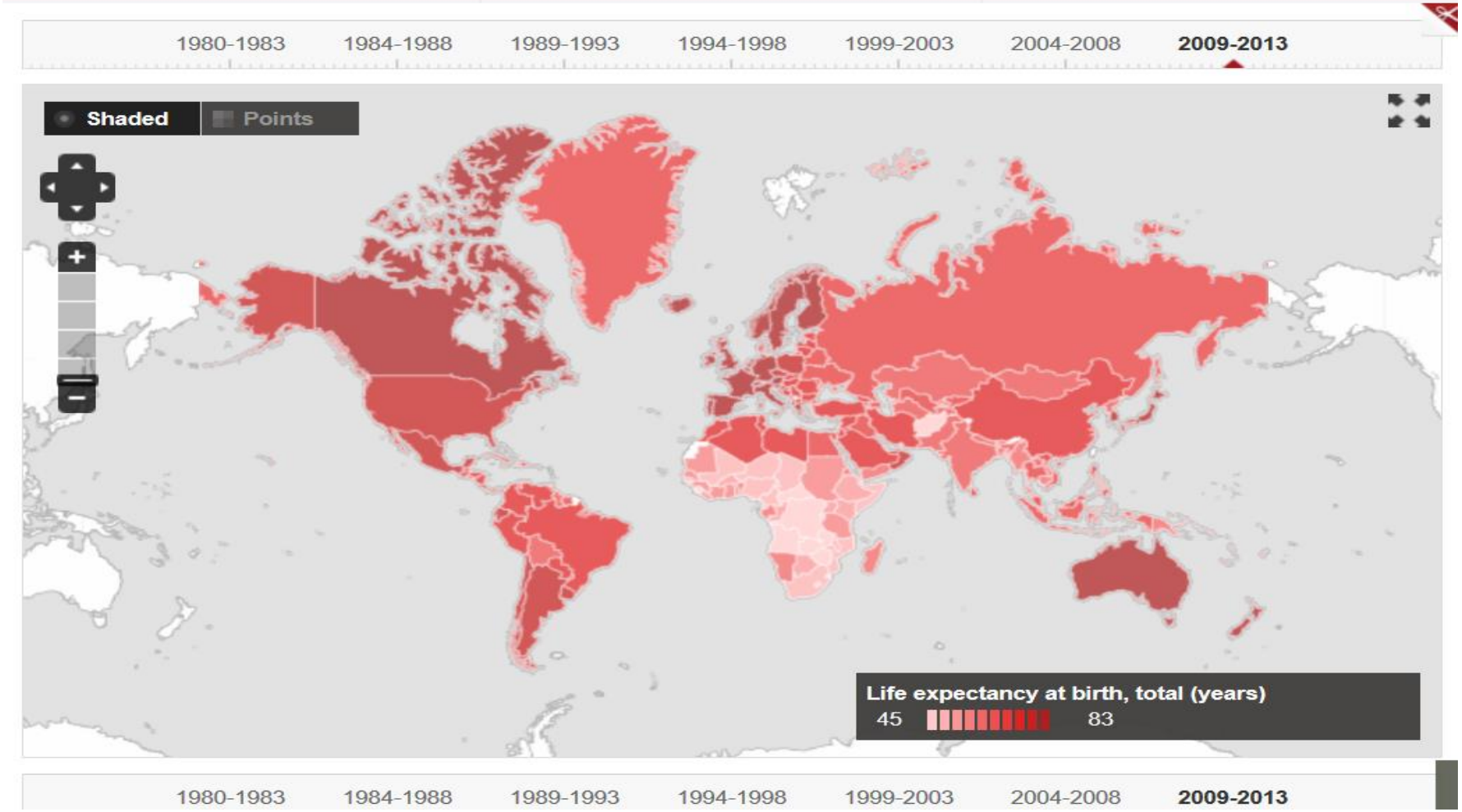




PBL Netherlands Environmental Assessment Agency

The effects of Climate Change in the Netherlands: 2012

Using sources as evidence: 5 key points



http://data.worldbank.org/indicator/SP.DYN.LE00.IN/countries?display=map

Five key points

Purposes

To enable students to:

- Examine sources themselves
- Identify significant points
- Identify trends
- Make generalisations
- Know what to look for when they use sources independently

Using evidence: layers of inference

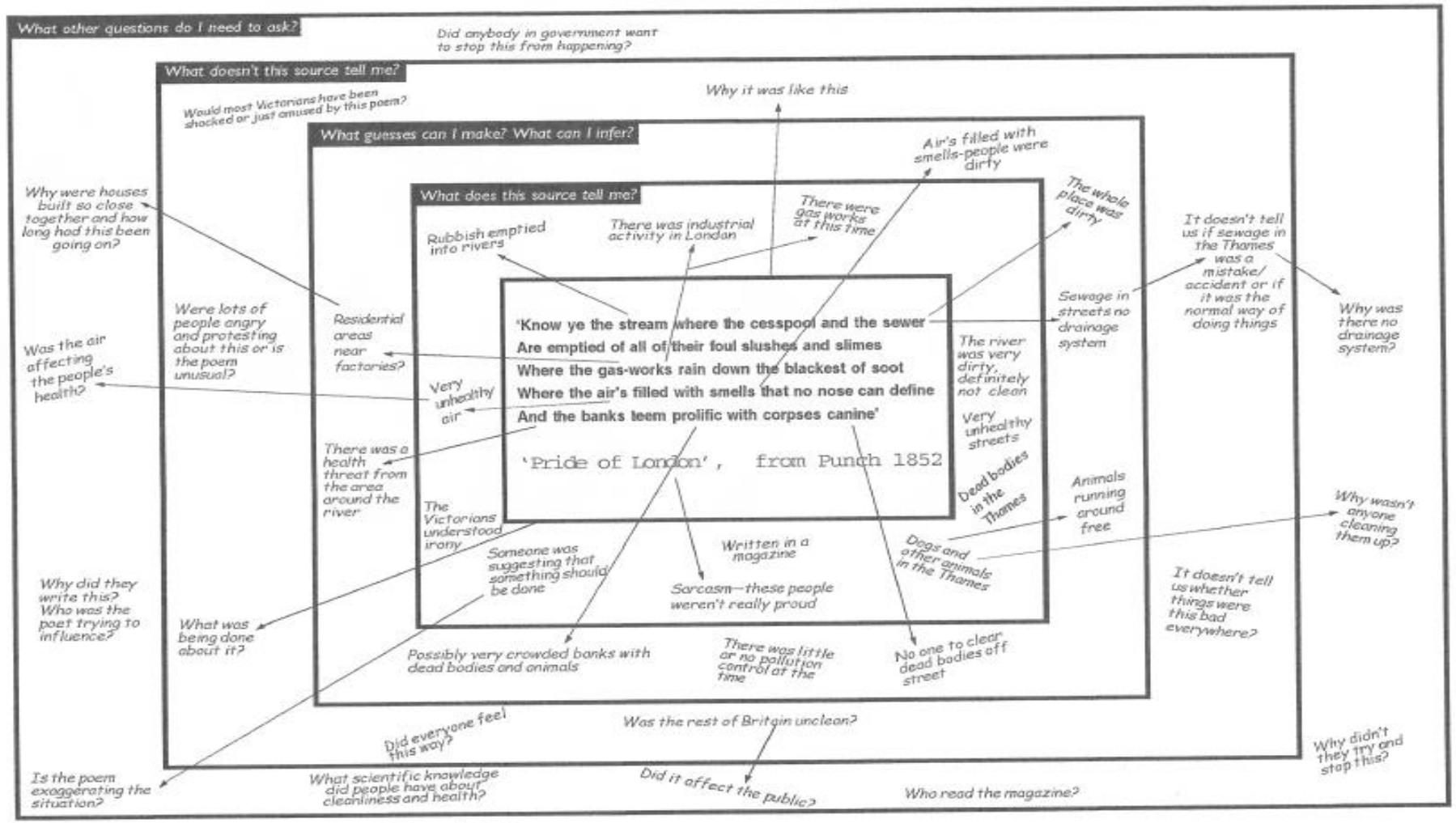
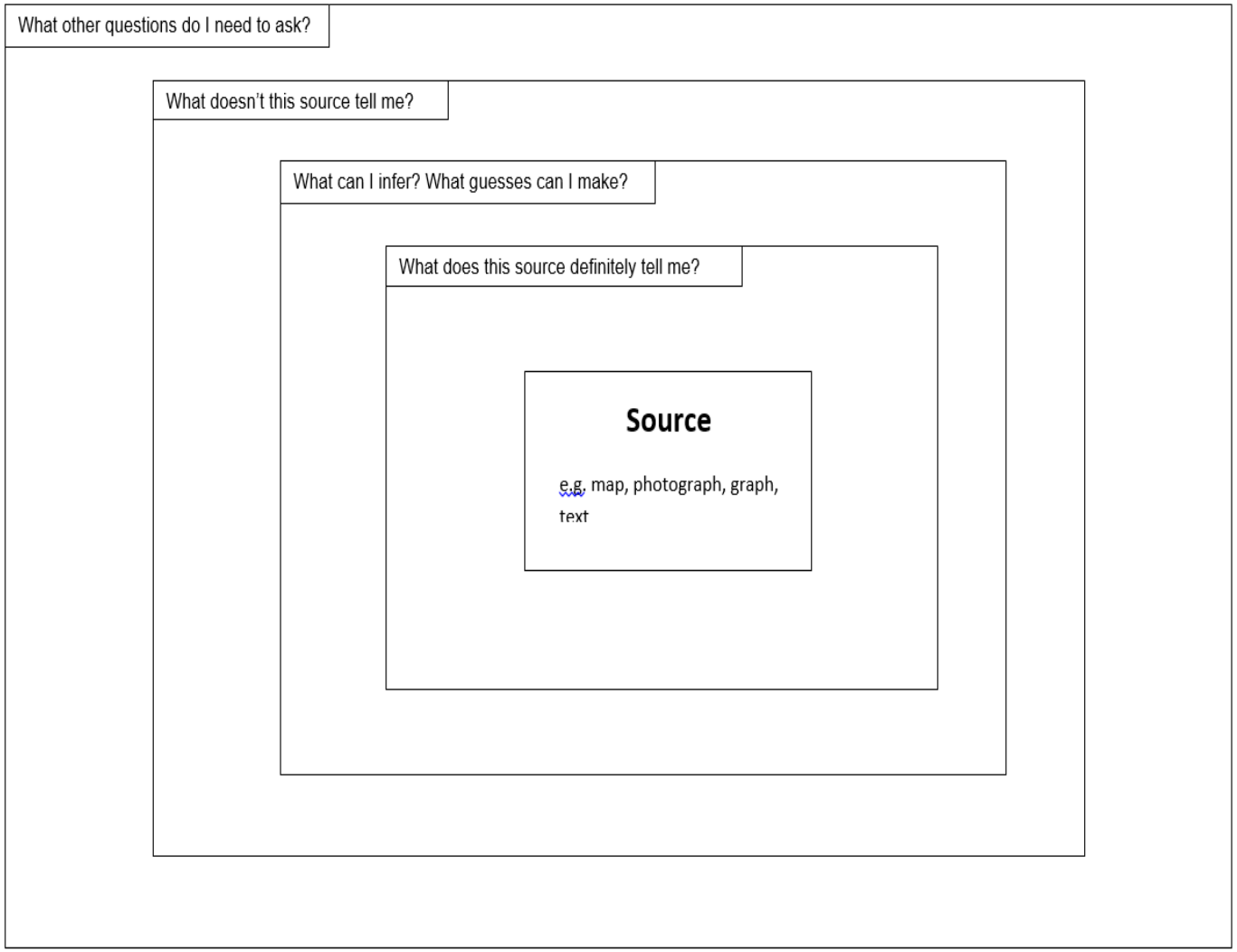
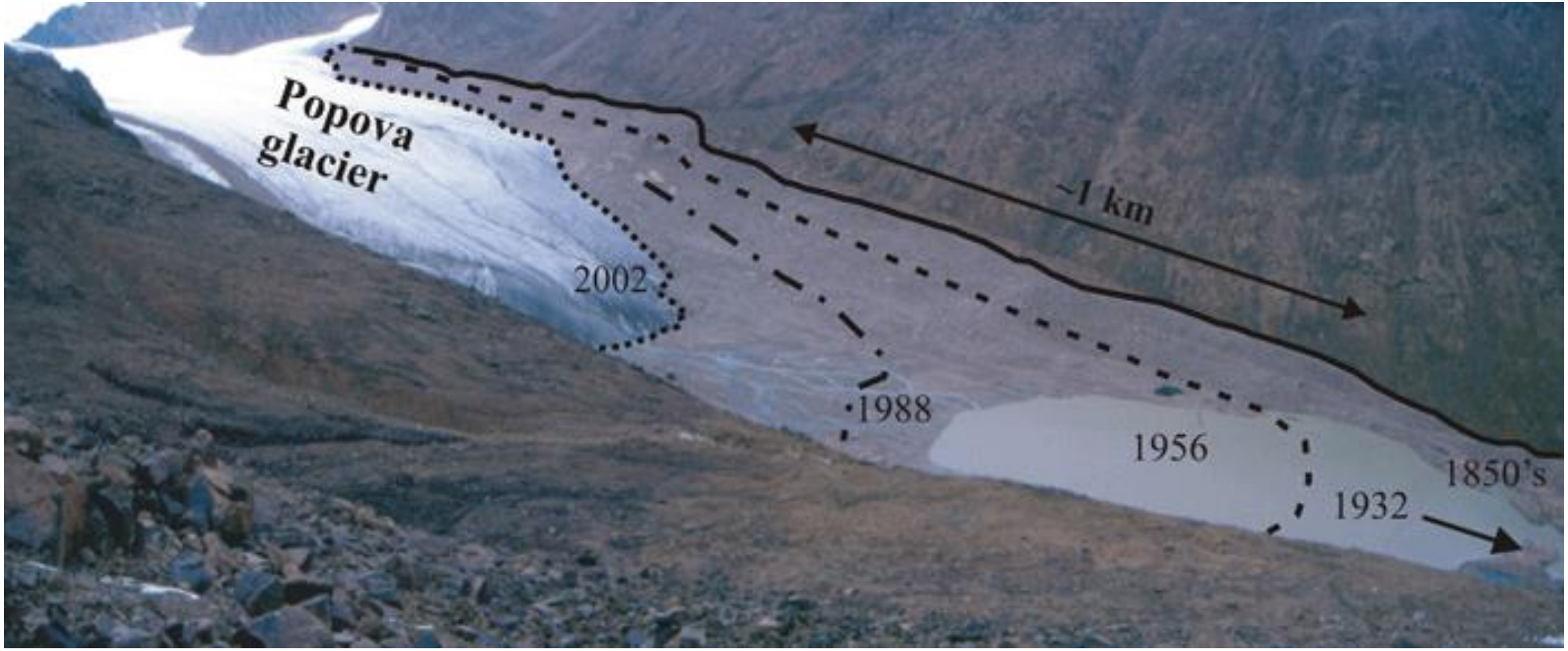


Figure 3 Pupils annotated the sources with clear instructions to position their comments in the appropriate ring.

Geographical evidence: layers of inference

Key Question being investigated _____





What does this source definitely tell me?

What can I infer? (what guesses can I make?)

What doesn't the source tell me? What other questions do I need to ask?

Layers of inference

Purposes

For students to:

- Examine geographical source materials closely
- Draw on prior knowledge in order to make informed guesses
- Become aware that any source material presents only partial evidence
- Become critical of geographical evidence
- Reveal what they understand and possible misunderstandings

Making sense: thinking geographically

- Making connections

- Reading for meaning (DARTs)
- Developing arguments
- Public meeting role play

Directed Activities Related to Text (DARTs)

Analysis and reconstruction DARTs

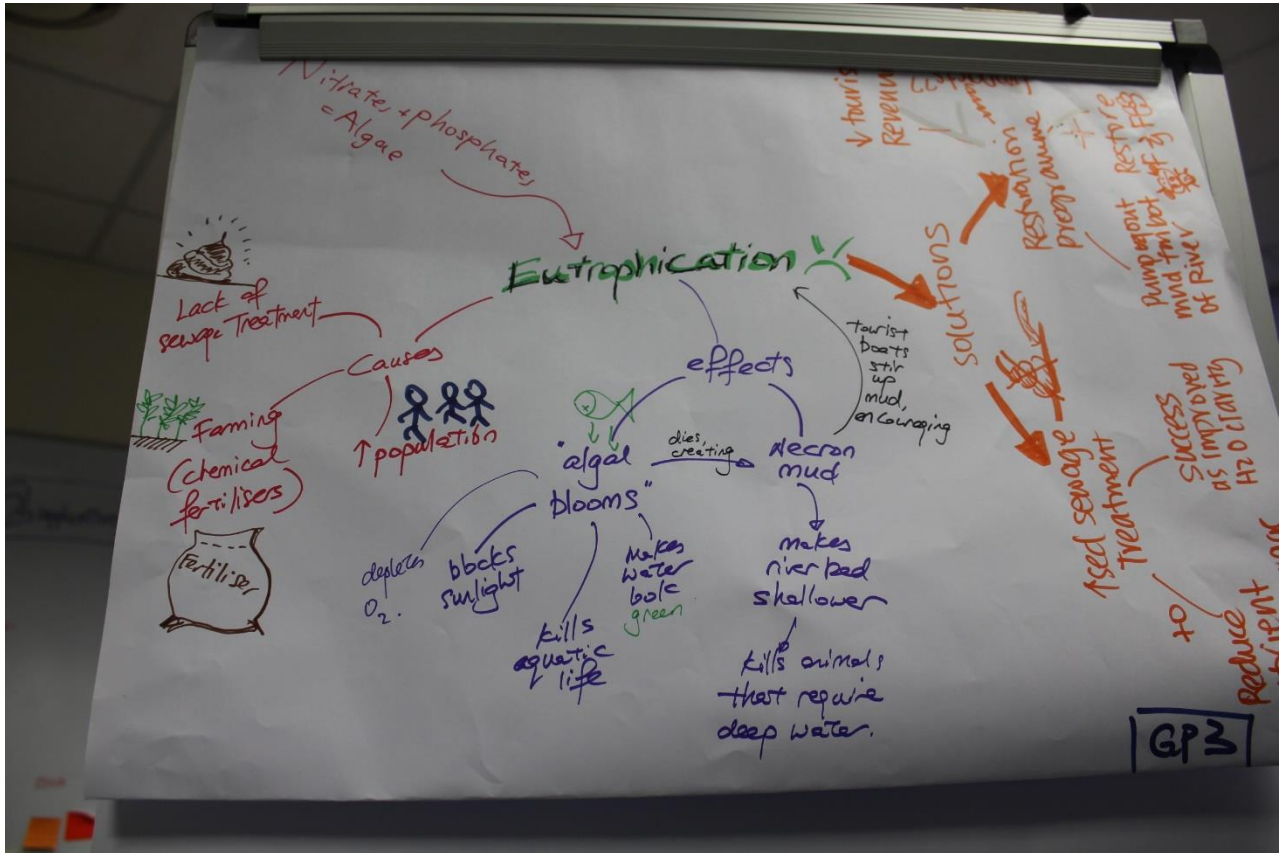
- Analysis of the text using underlining or by writing headings for paragraphs
- Reconstruction of the text in a different form

Making sense of eutrophication

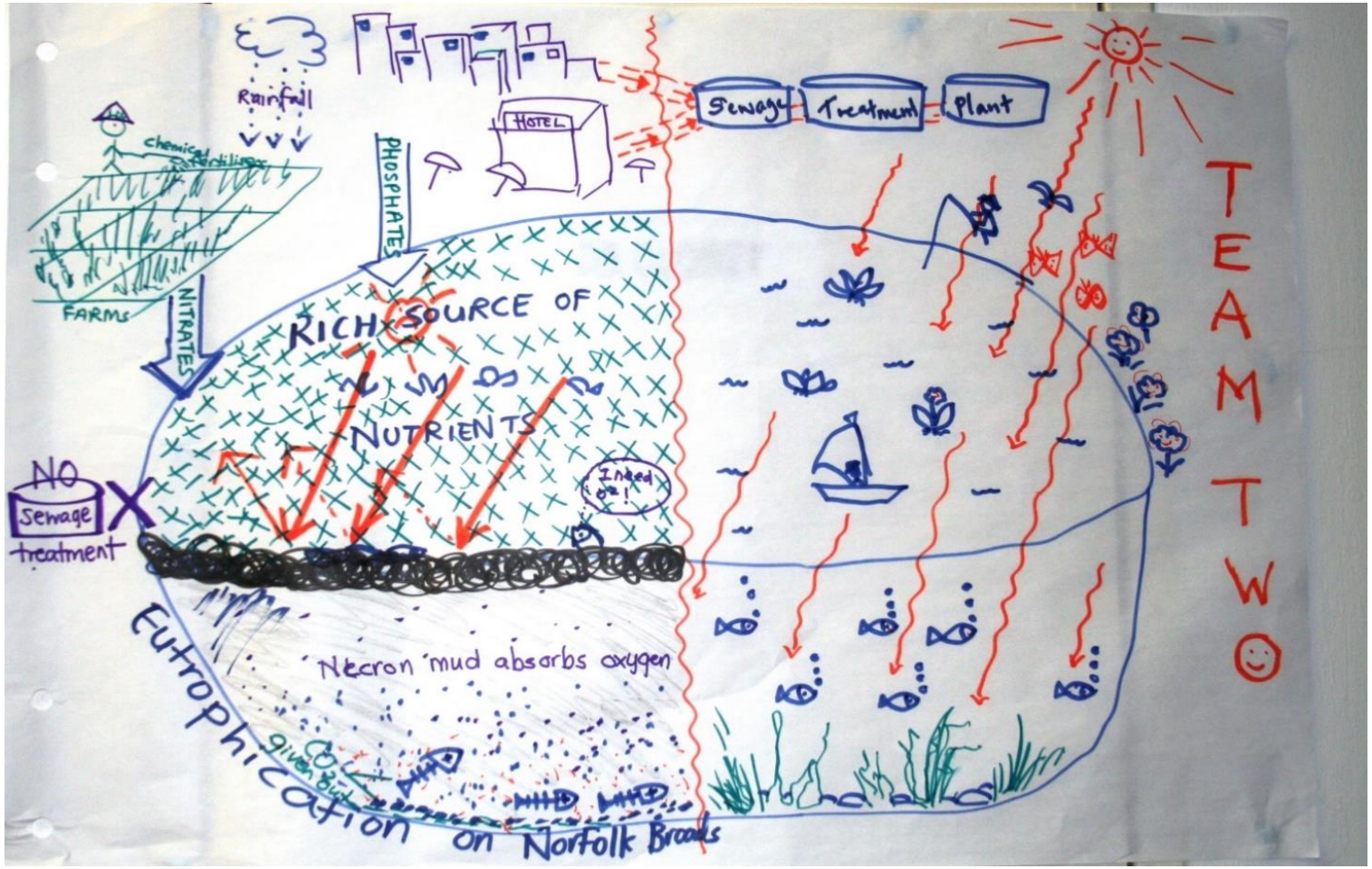
- *Definition: EUTROPHICATION is the nutrient enrichment of bodies of water, resulting in excessive plant grown and loss of oxygen.*

- *Read the text carefully.*
- *Underline things that <u>cause</u> eutrophication.*
- *Underline, in a different way, <u>the effects</u> of eutrophication.*
- *Underline, in a third way, <u>solutions</u> to the problems of eutrophication.*
- *Reconstruct the text pictorially to represent everything you have underlined.*

Thinking geographically: DART transformation



Thinking geographically: DART transformation



Categories for analysing text

- Economic, social, environmental, cultural, political, technological (factors or effects)
- Local, national, international, global (factors, effects or implications)
- Causes, effects, implications
- Physical causes, human causes
- Physical impacts, human impacts
- Short term effects, long term effects
- Who gains, who loses?
- Advantages, disadvantages
- Arguments for, arguments against
- Facts, opinions
- Big points, little points
- Claims, reasons, supporting facts and evidence

Directed Activities related to text

Purposes

For students to:

- develop their understanding of what they are reading and to understand a piece of text as a whole

- think analytically and geographically, using categories commonly used by geographers

- develop techniques of making notes from text

Singapore O level syllabus

Global tourism: is tourism the way to go?

- How does the nature of tourism vary from place to place?
- Why has tourism become a global phenomenon?
- Developing tourism: at what cost?

Should Mauritius aim to double the number of tourists by 2020?

Main terms

- Tourism
- International tourism
- Package holiday
- Long-haul destinations
- Regional fluctuations
- Foreign exchange
- Infrastructure development
- Fragile environment
- Sustainable tourism
- Carbon footprint

(coral reefs; conservation)

Thinking geographically - public meeting role play:

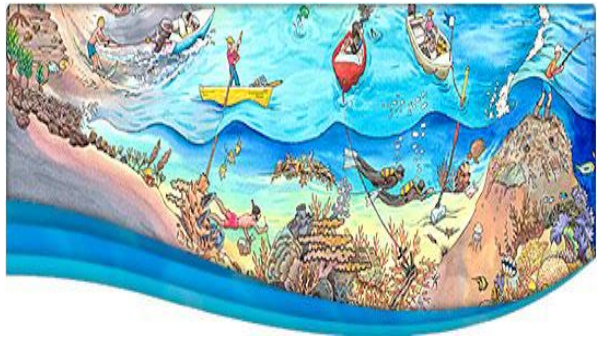
Should Mauritius aim to double number of tourists by 2020?

Government

Tourism Authority

'We Love Mauritius'

Local residents



Reef conservation

Enquiry through public meeting role play

Procedure

Preparation: study of information
(key arguments and data)
Introduction to issue by chair
Presentation of cases
Five minute interval to devise questions
Question time
Decision makers make decision
Debrief

Essential elements

- have a need to know
- use geographical sources as evidence
- make sense of information by selecting data to support arguments and counter-arguments
- reflect on what they have learnt during the debriefing

Debriefing role play

Interim debrief

What do you think decision will be? Why?

To each group

What were your strongest arguments?

What were your weakest arguments?

What was the strongest argument against you?

General discussion

Who will gain most if tourist numbers are doubled? Who will lose?

Which group is likely to have most/least influence?

Public meeting role play

Purposes

For students to:

Increase their knowledge and understanding of an issue

Examine different viewpoints on an issue and their underpinning values

Consider both objective and subjective evidence

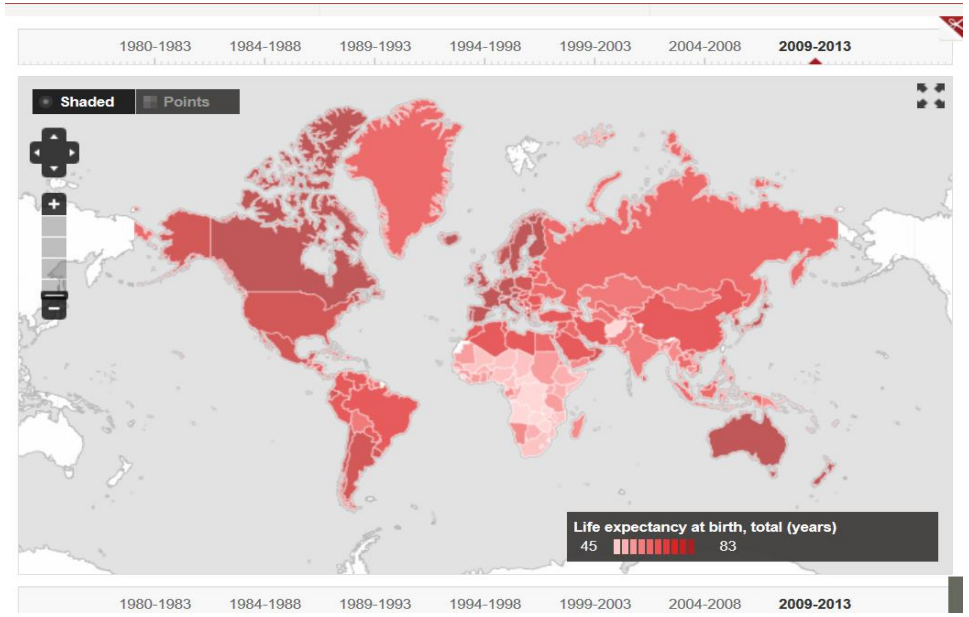
Develop investigative skills – searching for and selecting information

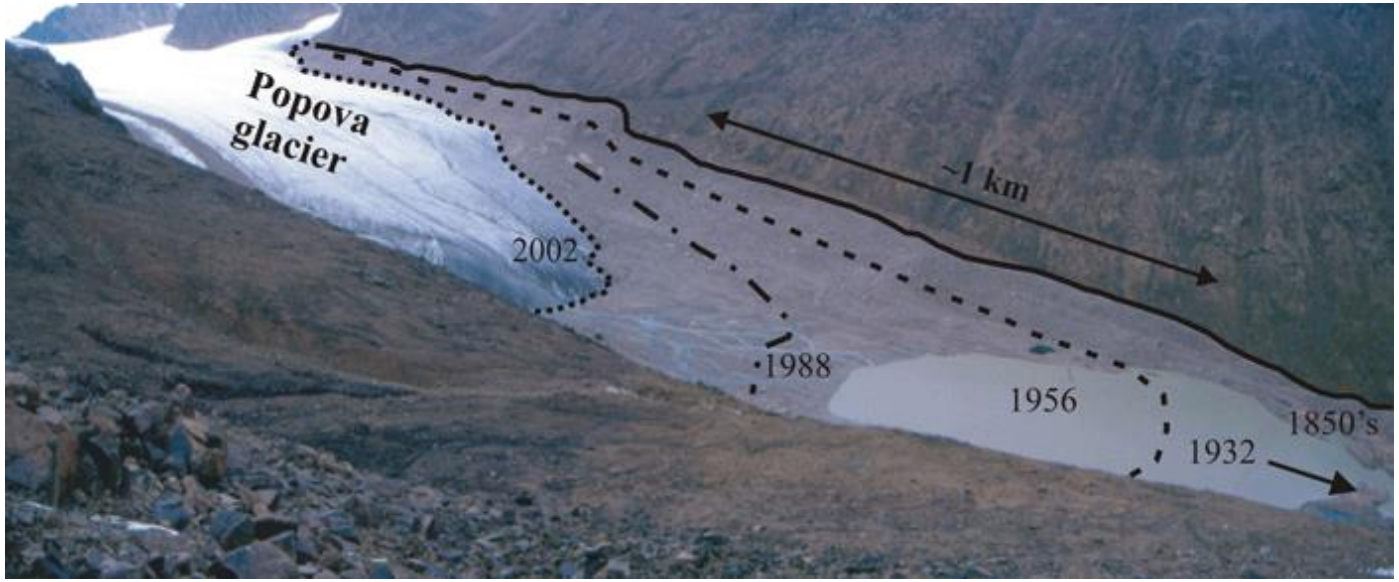
Develop skills of communication in order to present a case

Develop reasoned arguments and challenge arguments using evidence

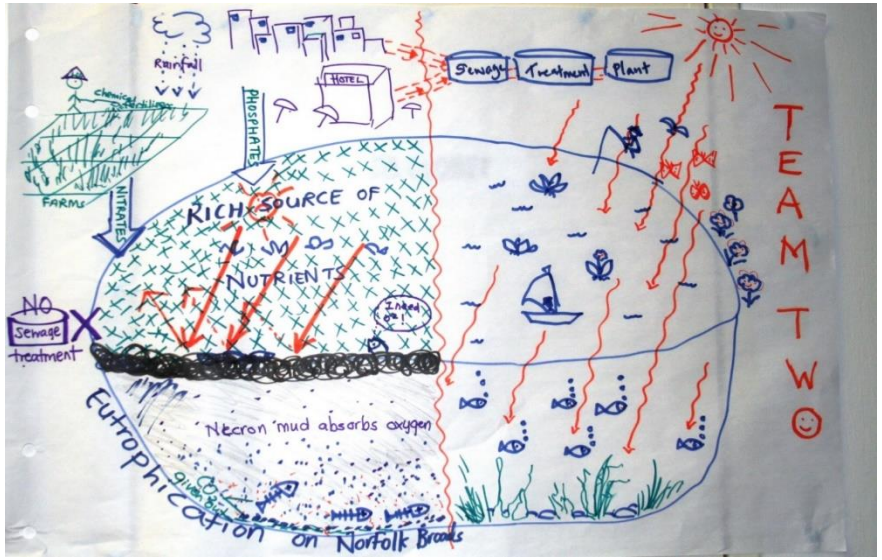
Reflecting on learning through debriefing

- Have the key questions been answered? What have we found out?
- Were the sources of information sufficient and appropriate? What further evidence could be looked for?
- Were the skills and techniques used to analyse and interpret data useful?
- Could the investigation of this theme/place/issue be improved or further developed in any way?





Reflecting on learning



“The difference that makes the difference”

Scaffolding

- Getting students involved in task
- Helping them represent tasks in terms they understand
- Help them to develop concepts
- Help them talk about their learning
- Reviewing the process of learning

Webster et al (1996)

GEOGRAPHY
Through Enquiry

Approaches to teaching and learning in the secondary school

MARGARET ROBERTS

Geographical Association