Teachers Empowering Teachers *for* **Knowledge Building**

專業同行
知識建構
共賦能

Knowledge Building Teacher Network

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Faculty of Education, The University of Hong Kong

Teachers
Empowering
Teachers *for*
Knowledge Building

專業同行
知識建構
共賦能

改革高中及高等教育學制

－對未來的投資

Why Knowledge Building? 知識建構

21st century learning

…….3+3+4 Reform Goals

- Literacy
- Critical Thinking, Higher-Order, Inquiry
- Project Learning
- Information Technology
- Community Building…. Values
    – Creativity - Knowledge Creation for 21st Century

What is the "Knowledge Building Teacher Network" (KBTN)?

Knowledge building

Students engage in inquiry & collaboration for 21st century learning supported by technology

-Addresses goals of educational reforms

Teacher Professional Development Network

Experienced (seconded) teachers mentoring new teachers on quality learning, supported with knowledge building theory, *pedagogy* & *technology*

--To sustain and to scale up innovations & good practice in schools

What is Knowledge Building?知識建構

Members working together contribute and to add value to the community (Scardamalia & Bereiter, 2006)
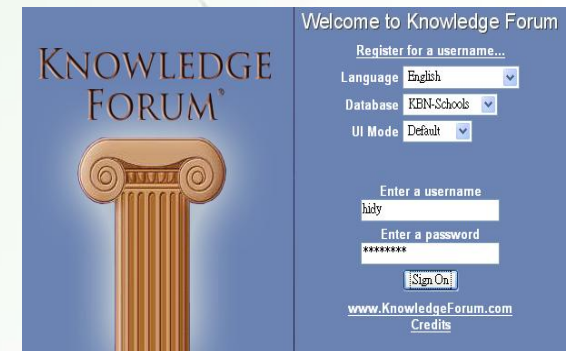
1)Epistemic Agency (active)

創建新知, 解決問題

2)Improvable Ideas (deepen)

深化討論

3) Community Knowledge 群雄獻技，

互補不足， 共享成果

What is Knowledge Building?

Knowledge Building includes but go beyond

-generic skills and project learning
-critical thinking and making argument
-online learning and technology

Critical thinking   knowledge building

I agree because   -How does it work?
I disagree because   -How is it possible?
What are your claim,   -How to make it better?
Reason.. Evidence.
To persuade   To improve collectively
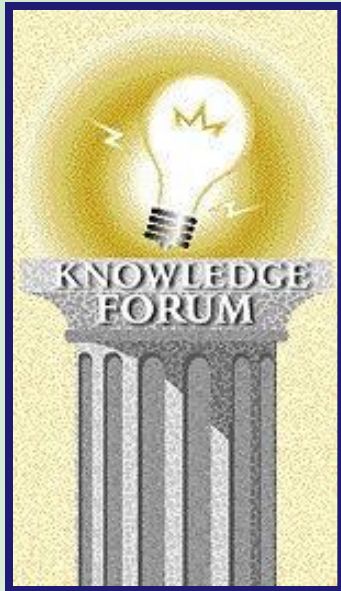
IKIT Institute for Knowledge Innovation and Technology

IKIT is a global network of organizations committed to the advancement of knowledge building technology and practices in all sectors of society

Home • Scholars Program • Summer Institute • Virtual Visits
Books or Chapters in Books • Published Articles • Conference Presentations

KNOWLEDGE FORUM

• …

Heading Into Deep Water

Knowledge Society Network *edit*▶

Sweden Finland
Norway
Korea Japan
UK
Germany Netherlands
Spain Italy
China
Taiwan
Singapore
Canada
USA
Mexico
Australia
New Zealand
Brazil

Vicky's *edit* ◀▶
- GOOD NOTES FROM Vicky_23 Mar
- Strategy seven - Scaffold , teaching English
- Strategy seven --Vicky's handout, CCCKWPS

Hidy's *edit* ◀▶
- Powerpoint_Hidy_23Mar07
- Handout_Hidy_23Mar

Fung & Au's *edit* ◀▶
- PKC_Design_English_Ice[1]
- Design Principles_CC_Fung 23 Mar
- 盡數風雲人物_Ice
- Ice_Curriculum Design_Final_23 Mar
- Ice_Handout_23 Mar
- Ice_Concept map_Curriculum Desgin_2

23March07 workshop_full version *edit* ◀▶
- Ice_concept map
- 23 Mar Full version
- collective knowledge building - 12 strategies
- jigsaw tasks - 2 themes and an emerging question

Stephen's *edit* ◀▶
- KBTN 2nd Workshop on 23Mar07 by Stephen (Draft)
- Good Questions posted by HKUGAPS students [KBTN 2nd Workshop on 23Mar07 by Stephen (Draft)]

Eddy's *edit* ◀▶
- 4-stage model for knowledge building_Eddy_Final_23 Mar
- Curriculum-Design_Eddy_Final_23 Mar
- Assessment_Eddy_Final_23 Mar
- Handout_Assessment_Eddy_Final_23 Mar

Sze's *edit* ◀▶
- 文理書院 中一級通識科 牌效應」的討論_Sze_23 M
- Sze_S2 Discussion_23Ma

Scaffolds

My theory

I need to understand

New information

This theory cannot explain

A better theory

Putting our knowledge together

Source of Information

Examples

(What did I learn?)
(What did we do that worked?)
(What didn't work and why?)
(What could we change next time?)
(It will be better if)

(我的立場/我同意/我不同意)
(我的觀點)
(我的新看法)
(我的理據/原因/詳盡討論)
(參考資料/新資訊)
(我的問題)
(比較)
(集合我們的意見)

(My Idea)
(This Idea Cannot Explain)
(A Better Explanation)
(Evidence:Support My Explanation)
(Reason:Support My Idea)
(Example)
(New Information)
(Putting our knowledge together)
(I Need To Understand)
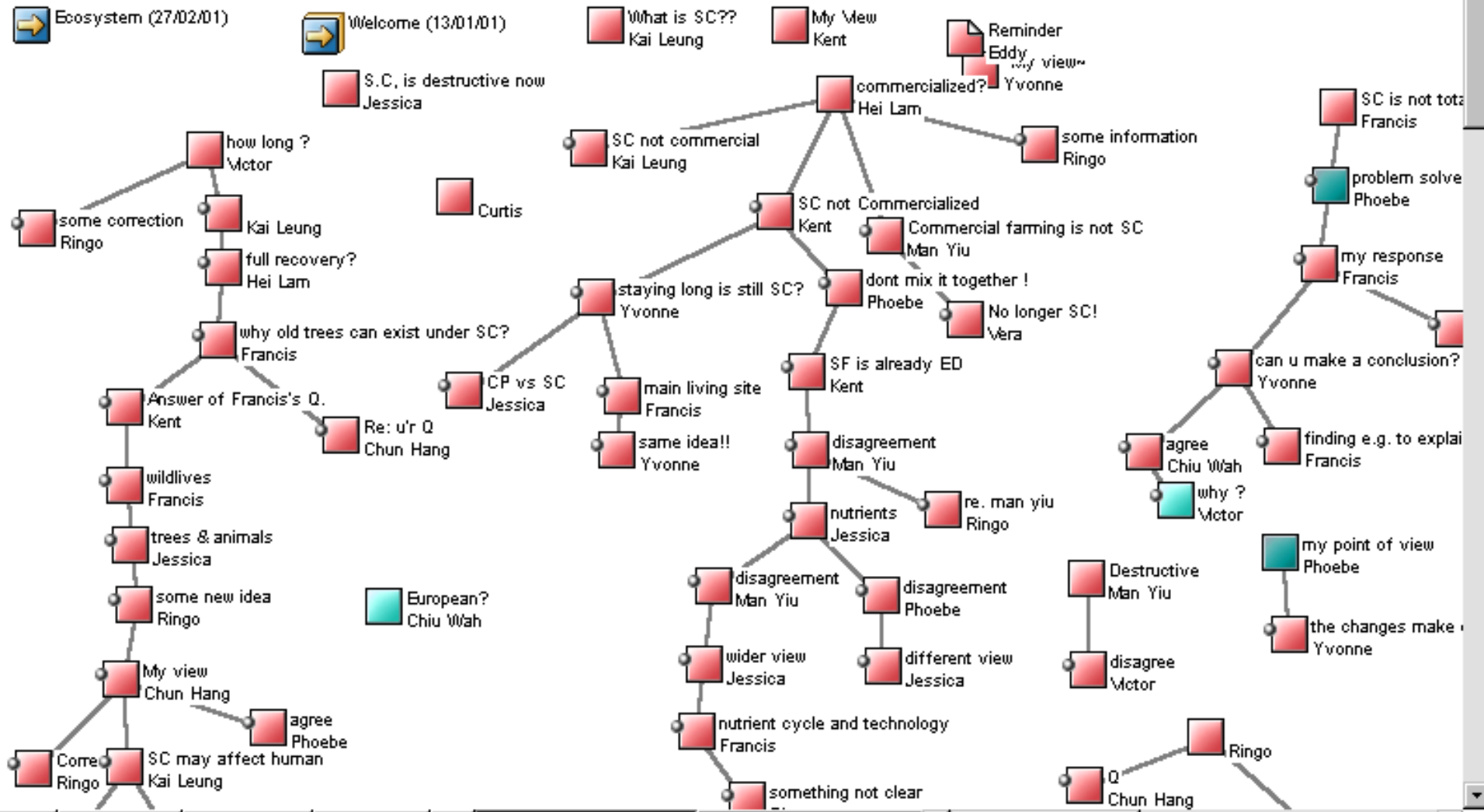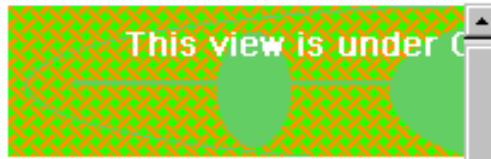(I agree)
(I do not agree)

執行... ▼   由%0顯示 討论 ▼

回應討論問題

■ 全球暖化，息息相關 *編輯* 作者： 4C04 Chan Yuen I [2007, 三月 03]
　■ 美國的問題 *編輯* 作者： 4C27 Kwan Ching Ki [2007, 二月 28]
　　■ 此乃為人也 *編輯* 作者： 4C16 To Wai Han [2007, 二月 28]
　　　■ 暖化黑手 *編輯* 作者： 4C27 Kwan Ching Ki [2007, 二月 27]
　　　　■ 誰要付最大的責任? *編輯* 作者： 4C42 Yu Ho Man [2007, 二月 26]
　　　　　■ 全球人類也應為全球暖化負責 *編輯* 作者： 4C25 Hung Ho Man [2007, 三月 05]
　　　　　　■ 污染地球的黑手--美國 *編輯* 作者： 4C27 Kwan Ching Ki [2007, 二月 27]
　　　　　　　■ 實際方法 *編輯* 作者： 4C05 Cheung Hei Man [2007, 二月 26]
　　　　　　　　■ 美國欠承擔感 *編輯* 作者： 4C10 Lam Lo Sai [2007, 二月 27]
　　　　　　　　　■ 不理會全球暖化問題--不負責任/自私 *編輯* 作者： 4C38 Wong Wai Chun [2007, 二月 26]
　　　　　　　　　　■ 反省? ...... *編輯* 作者： 4C06 Cheung Ka Hay [2007, 二月 26]
　　　　　　　　　　　■ 全球暖化是每個人的責任 *編輯* 作者： 4C17 TO YIK LAM [2007, 二月 28]
　　　　　　　　　　　　■ 發達國家於全球暖化問題上有不可推卸的責任 *編輯* 作者： 4C12 Lee Wai Yee [2007, 二月 26]
　　　　　　　　　　　　　■ 不是未影響到，只是明知故做。 *編輯* 作者： 4C25 Hung Ho Man [2007, 三月 05]
　　　　　　　　　　　　　■ 環境保護與利益不能並存? *編輯* 作者： 4C01 Au Tsz Ying [2007, 二月 26]
　　　　　　　　　　　　　　■ 一同存在的環境保護及經濟發展 *編輯* 作者： 4C 39 Yip Sui Wo [2007, 二月 27]
　　　　　　　　　　　　　　　■ 不但要用條約監管,還要進行公民教育 *編輯* 作者： 4C12 Lee Wai Yee [2007, 二月 2
　　　　　　　　　　　　　　　　■ 社會的責任 *編輯* 作者： 4C18 Wu Shuk Han [2007, 二月 28]
　　　　　　　　　　　　　　　　　■ 公民教育真的沒效嗎? *編輯* 作者： 4C17 TO YIK LAM [2007, 二月 26]
　　　　　　　　　　　　　　　　　　■ 公民教育的成效 *編輯* 作者： 4C15 Tang Mei Tan. [2007, 三月 03]
　　　　　　　　　　　　　　　　　■ '各地政府真的可以進行公民教育?放棄軍事可能有幫助... *編輯* 作者： 4C3
Ngan Ka Chai [2007, 三月 01]

　　　　　　　　　　　　　　　　　■ 強國會援助小國嗎? *編輯* 作者： 4C36 Wong Hiu Chun [2007, 三月 05]
　　　　　　　　　　　　　　　　■ 立法的成效不大 *編輯* 作者： 4C31 Leung Man Lok [2007, 二月 26]
　　　　　　　　　　　　　　　　　■ 獎勵比懲罰更為有效! *編輯* 作者： 4C01 Au Tsz Ying [2007, 二月 26]
　　　　　　　　　　　　　　　　　　■ 可再生能源絕對有助改善全球暖化 *編輯* 作者： 4C35 Ngan Ka Chai [2007
三月 01]

　　　　　　　　　　　　　　　　　■ 教育的效用? *編輯* 作者： 4C02 Chan Lai Sheung [2007, 三月 03]
　　　　　　　　　　　　　　　　　　■ 教育有一定的效用 *編輯* 作者： 4C09 Lai Wing Sze [2007, 三月 04]

What is bleach? How can bleach be made chemically ? You may know the term '1 to 99 diluted bleach' from the media nowadays. What does it mean?.......

'Bleach' is one of the chapter to be studied in F.4 (after the holiday) and you may find it in Book 2 Unit 33. You can have some discussions about this popular chemical in the SARS period.

Resumption of classes on 28 Apr
Ivan

Please give an appropriate title, keywords and scaffolds in your notes so that other users can follow easily in reading.

Welcome
Acids and bases
Mole calculations
Group project
Hair chemistry
Building chemical plant

neutralization
Challenge problems
Preparation of salt
Ammonia
Debate

What is bleach?
Clara

drugs
Alison

milk + bleach
April

drink milk??
Joyce

oops...HiStOrY!! ~'
Carol

how about wine?
Kammy

Tea n wine...
Jocelyn

to neutralize wor~
Kammy

Kammy

Teeth
Helena

strength of colour
April

drunk
Kammy

Dangerous wor~!
Macy

Colour of furniture
Leanne

Milk??!
Jocelyn

hot hot hot?!!?
Prudence

Response to Macy
Helena

floor cleaner
Queenie

Fiona

warm??!!
Anna

NeuTraLiZaTion
Carol

Vivian

Perrin

no mixing they say...~'
Carol

no direct contact
Kammy

Wine??
Macy

Peggy

Bleach Alternative
Leanne

Anna

drunk?..y??
Kammy

Anna

Joyce

poisonous gas...
April

Bleach + anti-acids??
Corrinne

Jacqueline

i think it's not neutralization
Karen

chlorine bleach
Joyce

QQ
Helena

Helena

reason
Vivian

agree a!!!
Florence

goo
Que

Cindy

New info
Helena

~.--??
April

other ways!!!!
Katherine

re
Perrin

no good~
Alison

Dilution of household bleach
Crystal

Acid+acid?
Gloria

to enhance health?
Karen

bleaching teeth!!!
Katherine

dilution of house hold bleach
Crystal

help!!!
Crystal

Anna

Enhance hea
Jocelyn

whitening gel
Virginia

whitening teeth?!
Katherine

Pegg

what if b
Alison

Re: whitening teeth...
Jocelyn

harmfull??
Youde

bleach ratio
Crystal

Simply White~
Helena

Katherin

>_<~!
Candy

whitening gel
Virginia

whitening gel~ & fluoride?
Esther

hydrogen peroxid~
Vivian

it's safe!!
Jocelyn

><"
Agnes

spilt?
Alison

using bleach without gloves
Virginia

No!
Kammy

Peggy

yes gwa~
Kammy

absorb moisture???
April

fluoride
Vivian

toothpaste
Clara

Peggy

Hair bleaching
Helena

ho 'la" ga!!
Kammy

damaging
Alison

El????
Heidi

How to dissolve gold
Crystal

HeLp~!! "~'''

gold dissolves in bleach~!! ^.<'"
Carol

ExPlOslON!!! @_@
Carol

Dehydrating agent??

for smokers

sth more...~'

Scaffolds | Keywords | Problem | i | Notes and Views

File   Edit   Objects   Go   Text   Windows   Editor   Help

Views | New Note | Connections | My Reader | Display Tool | Search | Media

Learning Portfolio

Tropical RainForest (Feb/01)

Ecosystem (27/02/01)

Debate: Shifting Cultivation is Ecologically Destructive.

This view is under (

Welcome (13/01/01)

What is SC??
Kai Leung

My View
Kent

Reminder
Eddy

My view~
Yvonne

SC is not tota
Francis

S.C, is destructive now
Jessica

commercialized?
Hei Lam

SC not commercial
Kai Leung

some information
Ringo

problem solve
Phoebe

how long ?
Victor

SC not Commercialized
Kent

Commercial farming is not SC
Man Yiu

my response
Francis

some correction
Ringo

Curtis

Kai Leung

full recovery?
Hei Lam

staying long is still SC?
Yvonne

dont mix it together !
Phoebe

No longer SC!
Vera

can u make a conclusion?
Yvonne

why old trees can exist under SC?
Francis

CP vs SC
Jessica

main living site
Francis

SF is already ED
Kent

agree
Chiu Wah

finding e.g. to explai
Francis

Answer of Francis's Q.
Kent

Re: u'r Q
Chun Hang

same idea!!
Yvonne

why ?
Victor

wildlives
Francis

disagreement
Man Yiu

re. man yiu
Ringo

my point of view
Phoebe

trees & animals
Jessica

nutrients
Jessica

Destructive
Man Yiu

some new idea
Ringo

European?
Chiu Wah

disagreement
Man Yiu

disagreement
Phoebe

the changes make
Yvonne

My view
Chun Hang

wider view
Jessica

different view
Jessica

disagree
Victor

agree
Phoebe

Corre
Ringo

SC may affect human
Kai Leung

nutrient cycle and technology
Francis

Ringo

Q
Chun Hang

something not clear

Scaffolds | Keywords | Problem | i | Notes and Views | ◀

開始 | Old Virus Definiti... | eleee 在 'e11s... | Knowledge F... | Shifting Culti... | Microsoft Po... | CH | AM 10:34

What is the teacher network?

demo: Home - Teacher Professional Development Network for Knowledge Building in Schools *edit*

Welcome to Knowledge Building TPD Network Home *edit*

Welcome to the KB Teacher Professional Development Network

This is where both experienced and novice KB teachers can learn about how to conduct knowledge building activities in their teaching by using the Knowledge Forum (KF). This is also a place for all teachers to share their views and experiences of using KF, and to look at the exemplars of KB work done by other teachers. Come here often to witness the growth of the network community of which you are a valuable contributor.

- 1. Knowledge Building Pedagogies and Databases
- 2. Knowledge Building Theoretical Issues
- 3. Knowledge Building Resources
- 4. Knowledge Building Teachers Network
- 5. Knowledge Building in Action
- 6. Knowledge Building Technology
- 7. Seconded Teacher Community

Participating Schools

KB Participating Secondary Schools 06-07 *edit* ▶
- (CCCKTSS) The Church of Christ in China Kei To Secondary School - Home
- (CCCMKC)The Church of Christ in China Ming Kei College - Home
- (CC) Cognitio College (Kowloon) - Home
- (CCYMSS)Caritas Chong Yuet Ming Secondary School - Home
- (CMYSS) Catholic Ming Yuen Secondary School - Home
- (EC) Elegantia College - Home
- (HNC) Ho Ngai College - Home
- (LSS) Lutheran Secondary School - Home
- (PKC) Pui Kiu College - Home
- (RC) Raimondi College - Home
- (SHCCC) Sacred Heart Canossian College of Commerce - Home
- (YOTTKPSS)Yan Oi Tong Tin Ka Ping Secondary

KB Participating Primary Schools 06-07 *edit* ◀▶
- (CCCKWPS) The Church of Christ in China Kei W
- (APSSS) Alliance Primary School Sheung Shui - H
- (GCEPSATKO) G.C.E.P.S.A. Tseung Kwan O P
- (KTVHTS) Kam Tsin Village Ho Tung School - H
- (LSPS) Li Sing Primary School - Home
- (IC) HKUGA Primary School 6A
- (PKC) Pui Kiu College - Home

KBTN-Schools: (RC) Raimondi College - Home *edit*

Link to Raimondi College Databases *edit*
Link to Raimondi College Databases

中華基督教會基道中學
The Church Of Christ In China
Kei To Secondary School

Student Performance *edit* ◀▶ *edit* ◀▶

Kiu College *edit* ▶

PUI KIU COLLEGE
培僑書院
NURTURE BRILLIANT GENERATIONS
中西薈萃 培育出類拔萃新生代

The Church of Christ in China Ming Kei College (2006-2007) *edit* ▶

KBTN-Schools2: (SSYHNC) SSY Ho Ngai College - Home

Welcome to SSY Ho Ngai College Knowledge Forum Homepage *edit* ▶

可藝中學

External Link   View U

Collective Work from Teachers

DRAGON LEAD *edit*▶

ENERGY *edit* ◀▶
⬛ (IC) ENERGY - Hong Kong Dragons
⬛ (IC) ENERGY - Barcelona Dragons
⬛ (IC) ENERGY - Hong Kong Dragons Meet Barcelona Dragons

FESTIVAL *edit* ◀▶
⬛ (IC) FESTIVAL - All Dragons

Other links *edit* ◀
⬛ KBTN- Professional Development Network for Knowledge Building in S

Do Action...	▼

⬜ 🟥 GREETINGS FROM BARCELONA (SPAIN)/SALUTATIONS

Knowledge Building Teacher Network

Learning for 21ˢᵗ century 廿一世紀學習
持續創新

Knowledge building communities 知識建構社群

Technology-enhanced learning 科技創新

How to Implement Knowledge Building in Classroom? Principles

Student Agency

Community Knowledge

Improvable Ideas…. Emergent….

Principles & Curriculum Design for KB (1)

Component 1 – How to develop collaborative culture in classroom

Student Agency…..Community Knowledge

- Students working with each other in classroom.. Student ideas & questions

- Putting out ideas to public for improvement- group work, idea charts…KWL, inquiry-based learning, jig-saw, knowledge-building 'walls'etc

Principles & Curriculum Design for KB (2)

Component 2 – How to Start collaborative Inquiry Using Knowledge Forum

Epistemic Agency….Community Knowledge

– Design and integrate curriculum with knowledge-building

- Big ideas…Key problems…Inquiry-based…information search…what students know and want to know

– Scaffolds for 'inquiry' and 'critical thinking'.. both

– Design of views; Student grouping

– Other questions

- Should I set a question; how to encourage students to contribute…? No notes or how to read so many notes?

Scaffolds (thinking prompts)

Theory Building

I need to understand

My theory

New Information

A better theory

This theory cannot explain

Putting our knowledge together

Critical Thinking

My claim...standpoint

Reason

Elaboration

Evidence

Examples

Interpretation

Rebuttal

Synthesis

More on Scaffolds

Scaffolds for

- New Learning/Conceptual Change ?

- English Language?

- Project Learning?

Knowledge Creation?

Bleach

File Edit Objects Go Text Windows Editor Help

Views | New Note | Connections | My Reader | Display Tool | Search | Media

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Ammonia
Debate

What is bleach? Clara
Colour of furniture Leanne
strength of colour April
floor cleaner Queenie
no mixing they say...~ Carol
Perrin
Peggy
Anna
Joyce
Bleach Alternative Leanne
chlorine bleach Joyce
poisonous gas... April
Cindy
New info Helena
QQ Helena
~.--?? April
Dilution of household bleach Crystal
Acid+acid? Gloria
Bleach + anti-acids?? Corrinne
Fiona
no direct contact Kammy
Milk??! Jocelyn
drunk Kammy
drugs Alison
how about wine? Kammy
Tea n wine... Jocelyn
to neutrolize wor~ Kammy
milk + bleach April
drink milk?? Joyce
oops...HiStOrY!! ~ Carol
Kammy
Teeth Helena
Dangerous wor~! Macy
Response to Macy Helena
Vivian
hot hot hot?!!? Prudence
warm??!! Anna
NeuTraLiZaTion Carol
Wine?? Macy
Anna
Jacqueline
Helena
reason Vivian
drunk?..y?? Kammy
i think it's not neutralization Karen
agree a!!! Florence
no good~ Alison
goo Que
bleaching teeth!!! Katherine
dilution of house hold bleach Crystal
help!!! Crystal
bleach ratio Crystal
other ways!!!! Katherine
re Perrin
to enhance health? Karen
Anna
Enhance hea Jocelyn
Pegg
Re: whitening teeth... Jocelyn
harmfull?? Youde
>_<~! Candy
>< Agnes
spilt? Alison
using bleach without gloves Virginia
whitening gel Virginia
whitening teeth?! Katherine
Simply White~ Helena
whitening gel Virginia
what if b Alison
Katherin
hydrogen peroxid Vivian
it's safe!! Jocelyn
Peggy
yes gwa~ Kammy
ho "la" ga!! Kammy
absorb moisture??? April
No! Kammy
whitening gel~ & fluoride? Esther
Peggy
Hair bleaching Helena
gold dissolves in bleach~!! ^.<~ Carol
ExPlOsIoN!!! @_@ Carol
damaging Alison
El???? Heidi
fluoride Vivian
toothpaste Clara
How to dissolve gold Crystal
HeLp~!! ~~~
sth more...~
Dehydrating agent??
for smokers

Desert Climate (Feb/01)

File   Edit   Objects   Go   Text   Windows   Editor   Help

Views | **New Note** | **Connections** | **My Reader** | **Display Tool** | **Search** | **Media**

In this view, you can create notes about the climatic characteristics of desert for classmates and the experts to respond. The notes can be in form of questions, reflections, concept maps, learning diaries...etc. The view is under Francis' maintenance.
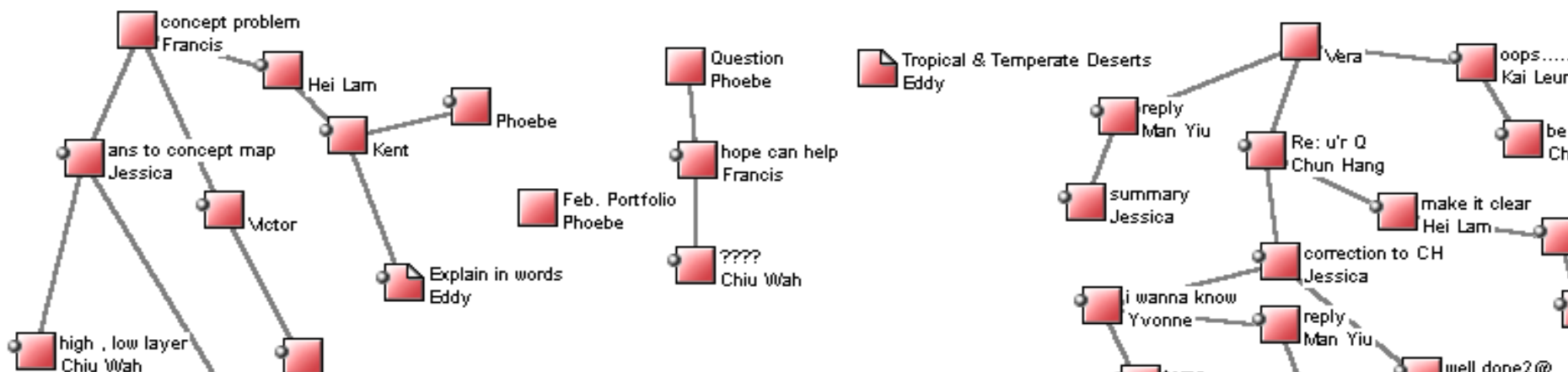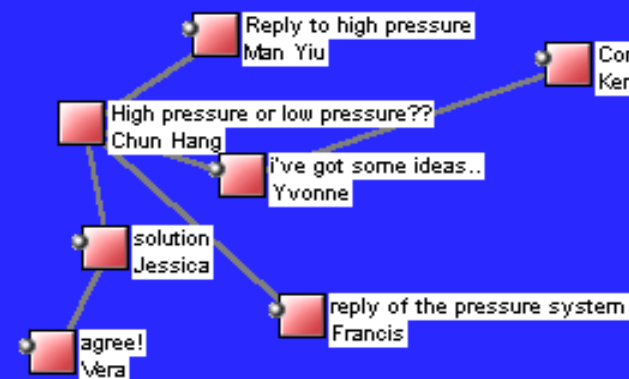
Welcome (13/01/01)

Desert Soil (Feb/01)

Tropical RainForest (Feb/01)

Learning Portfolio

Desert Vegetation (Feb/01)

Chat Room

THIS SECTION RELATES TO THE FORM OF PRECIPITATION IN DESERT ENVIRONMENT

This view has been relocated to the 'Desert Precipitation View'. Please click the icon below to continue your discussion.

Precipitation in Desert (16/02/01)

Pressure system

Reply to high pressure
Man Yiu

Cor
Ken

High pressure or low pressure??
Chun Hang

i've got some ideas..
Yvonne

solution
Jessica

reply of the pressure system
Francis

agree!
Vera

concept problem
Francis

Hei Lam

Phoebe

ans to concept map
Jessica

Kent

Victor

Explain in words
Eddy

high , low layer
Chiu Wah

Question
Phoebe

hope can help
Francis

Feb. Portfolio
Phoebe

????
Chiu Wah

Tropical & Temperate Deserts
Eddy

Vera

oops.....
Kai Leun

reply
Man Yiu

Re: u'r Q
Chun Hang

be
Ch

summary
Jessica

make it clear
Hei Lam

correction to CH
Jessica

i wanna know
Yvonne

reply
Man Yiu

well done2@

Scaffolds | Keywords | Problem | i | Notes and Views

開始 | Old Virus Definiti... | eleee 在 'e11s... | Knowledge F... | Desert Climat... | Microsoft Po... | CH | AM 10:29

Design for Knowledge Building (3)

Component Three – How to deepen discussion? Rise Above

- KB Talk - Integrate knowledge building with class activity (e.g., discuss KF work in class; class activity in KF)
- Knowledge Management
  - View maintenance
  - Students as experts
  - Rise above…. Summary notes.. New views etc.

- Focus on progress and idea improvement
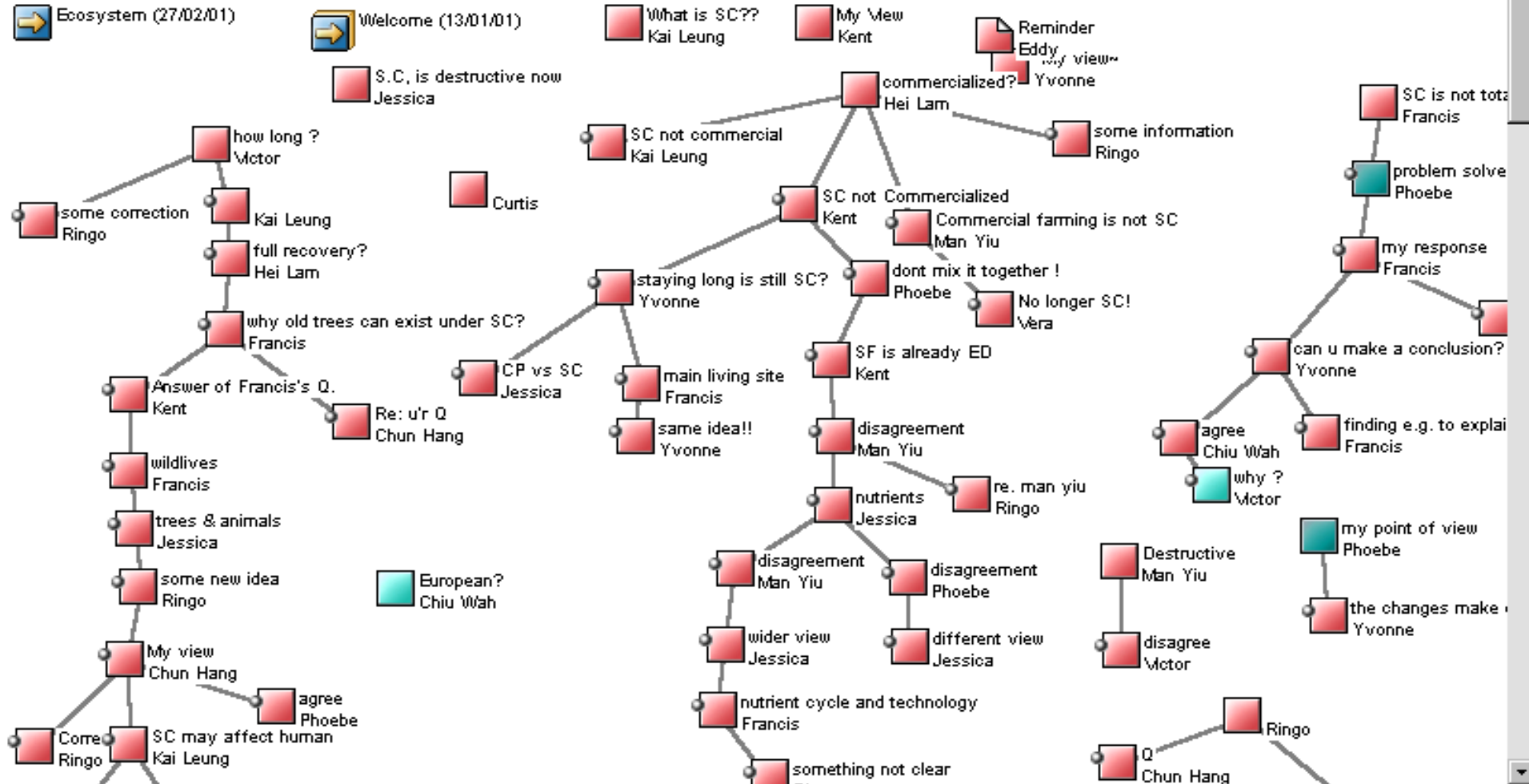
Debate on Shifting Cultivation

Design for knowledge building (4)

Component Four – How to Assess Student's Understanding?

Reflective Assessment

- Using Assessment to scaffold and foster knowledge building
- Tools (Applets, journals, rubrics, portfolio etc.)

Individual to Collective

How to teach well without teaching?
How to assess well without over-assessing?

Designing a Curriculum Unit

Principle-Based .. Integrate with tasks & activities

- Student agency
- Community knowledge
- Improvable ideas

Others… can we have diverse ideas… constructive use of information… (information search).. Assessment for learning…and others…