

香港高等教育科技學院
Technological and Higher
Education Institute of Hong Kong

Inclusion of “Experiential Learning Activity” for Teaching and Learning of Scientific Thinking

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Technological and Higher Education Institute of Hong Kong (THEi) 香港高等教育科技學院



Member institution of Vocational Training
Council

Offers 20 vocationally and professionally
oriented degree programmes



New Campus at Chai Wan

- Green Building Award 2014 (New Buildings Category)
- Cityscape Awards for Emerging Market 2014 (Community and Culture Project Award – Future)



Tsing Yi Campus



Students Hall

3 Faculties & 1 School

Faculty of
Design &
Environment
(FDE)

School of
General
Education &
Languages
(SGEL)

Faculty of
Management
& Hospitality
(FMH)

Faculty of
Science &
Technology
(FST)

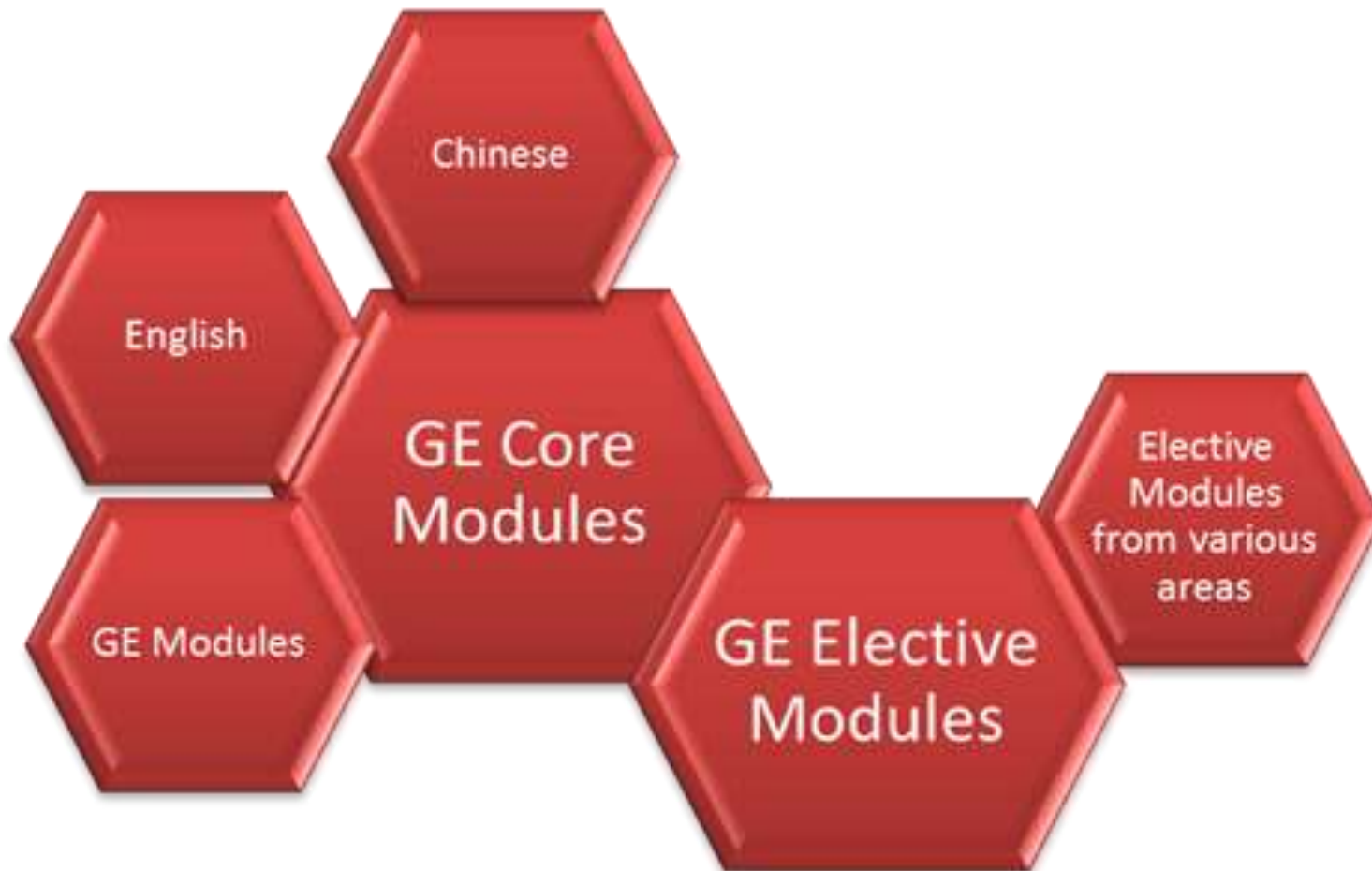
What is General Education @ THEi?

General Education (GE) has been designed to introduce students to *broader perspectives* relating to the *humanities, sciences and social sciences!*

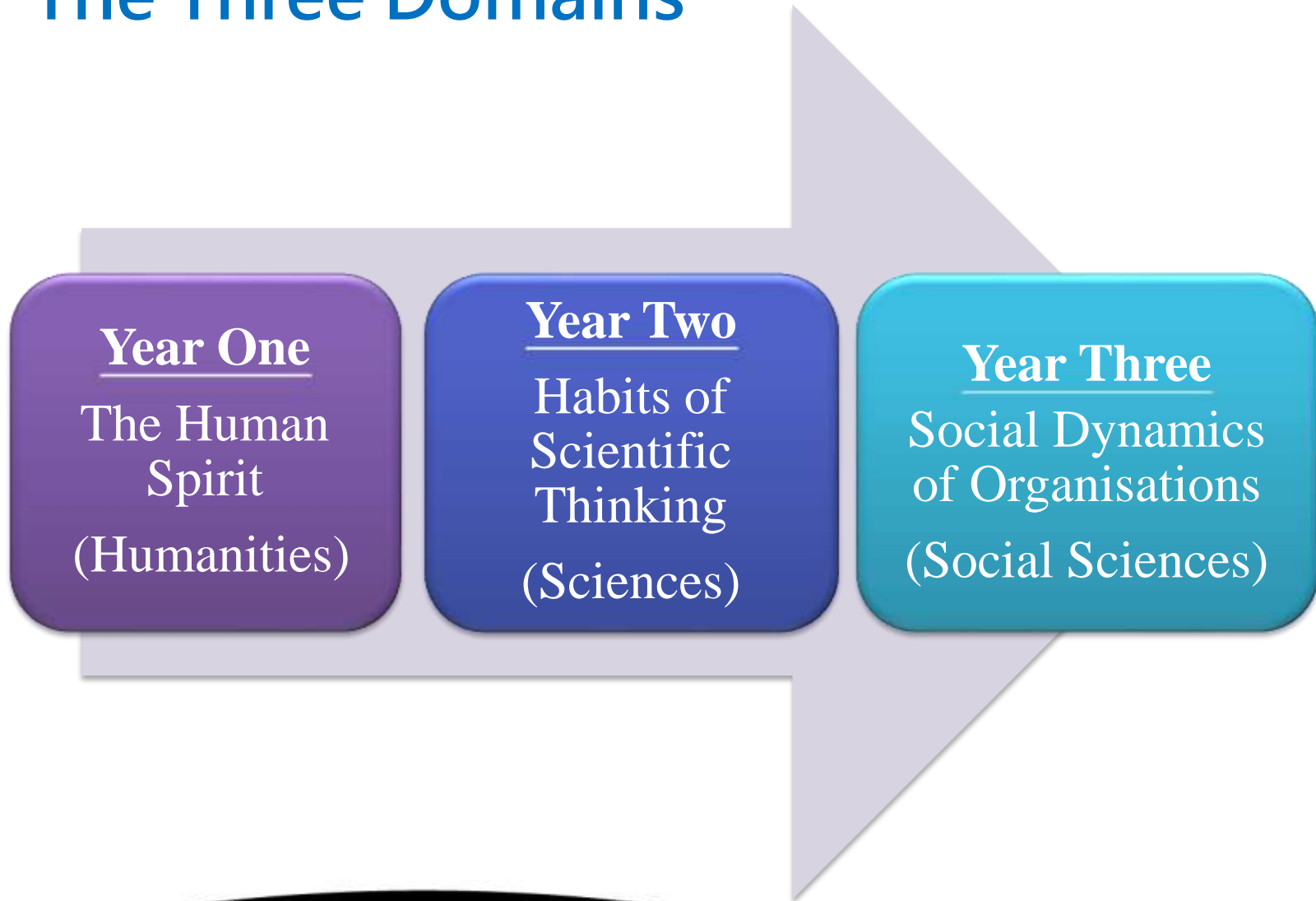
GE is very important. It cultivates important *transferrable skills* that are *broadly applicable*. New skills, competencies and values will contribute to your professional success, lifelong learning and development and personal fulfillment!



GE Core Modules



The Three Domains

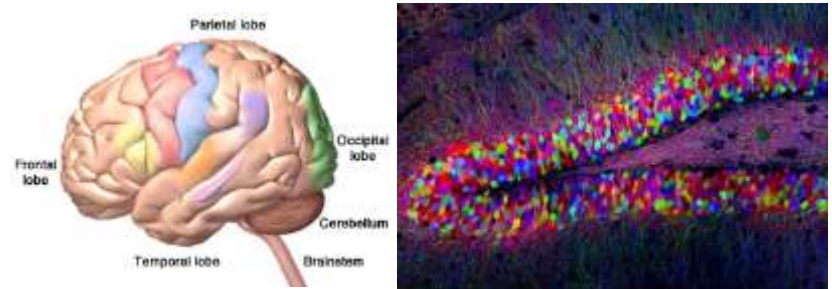


Habits of Scientific Thinking

Unit 1: How Do Scientists Think?



Unit 2: What is the Science of Creativity and the Creativity in Science?



Unit 3: What is Sustainability Science?



Unit 4: Has Science and Technology Improved the Quality of Life?

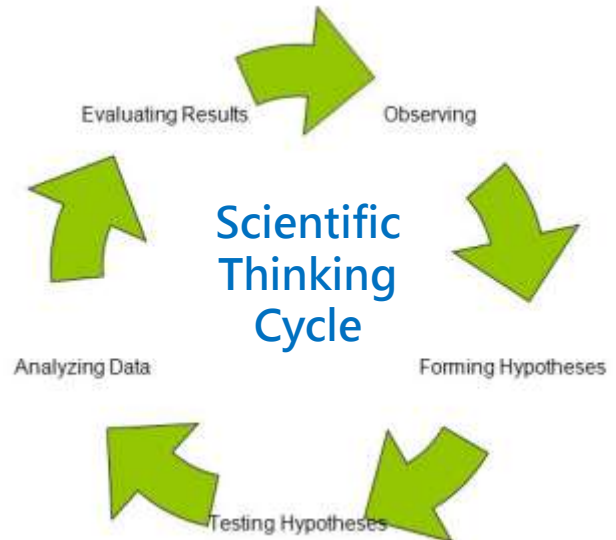




"Scientia"

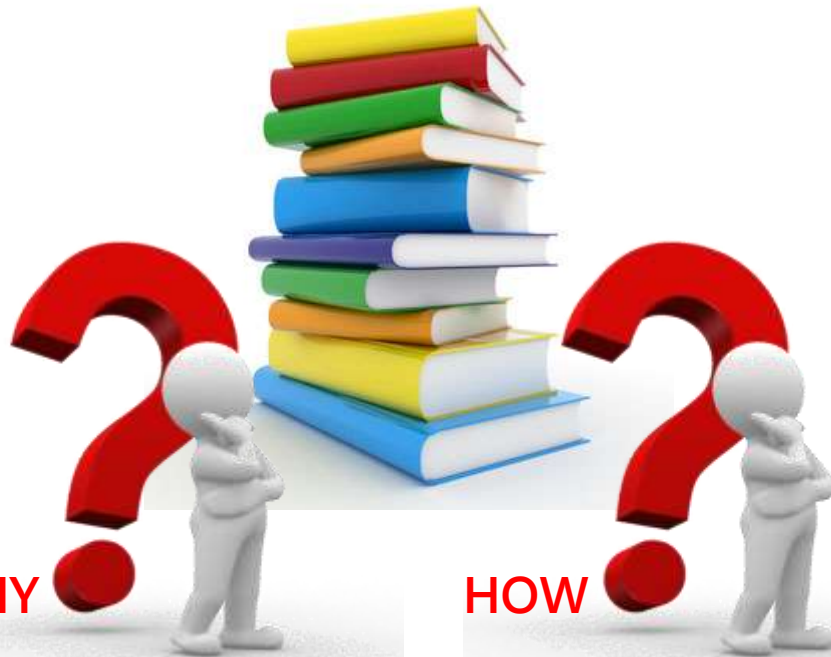


System



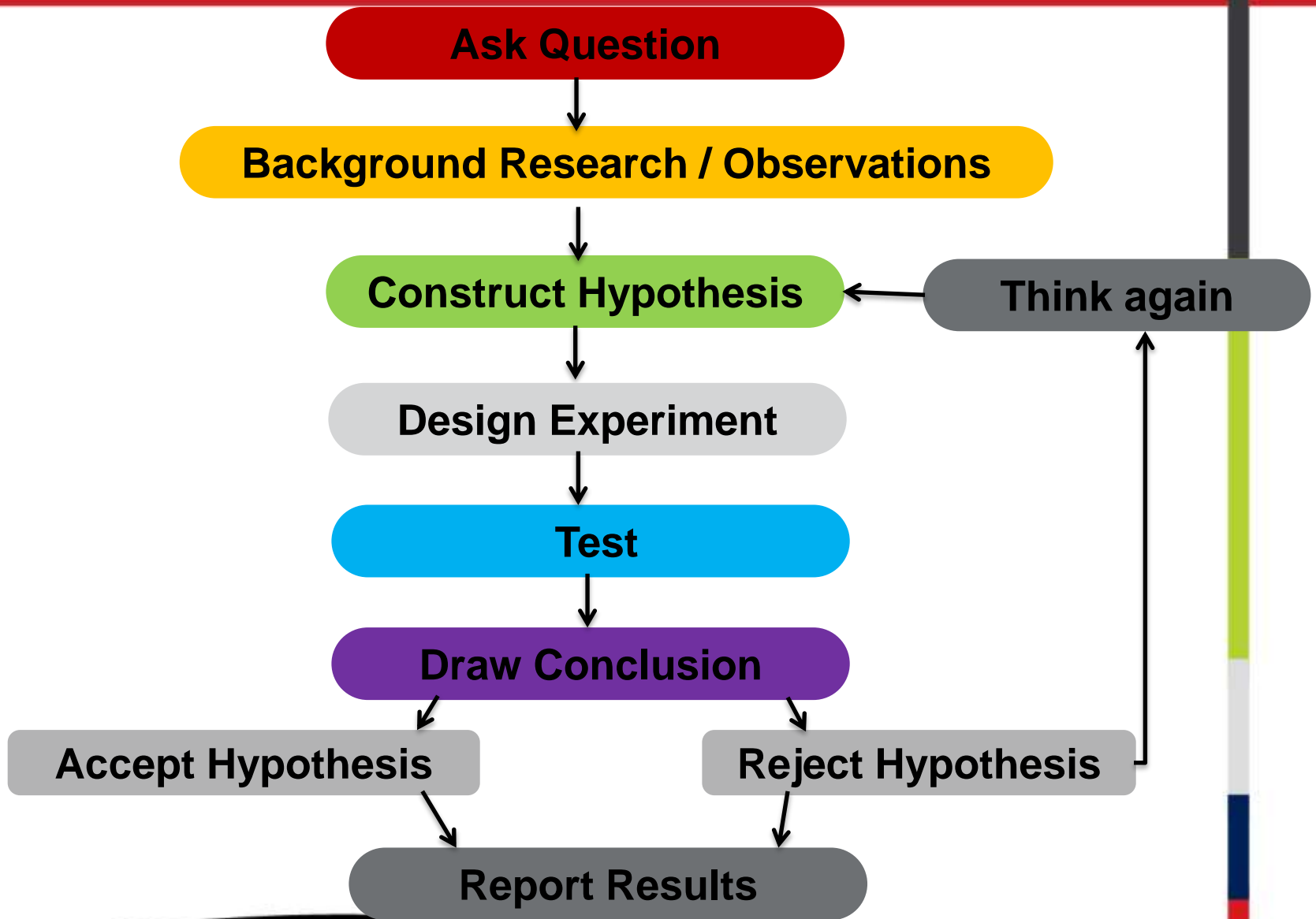


WHY



HOW

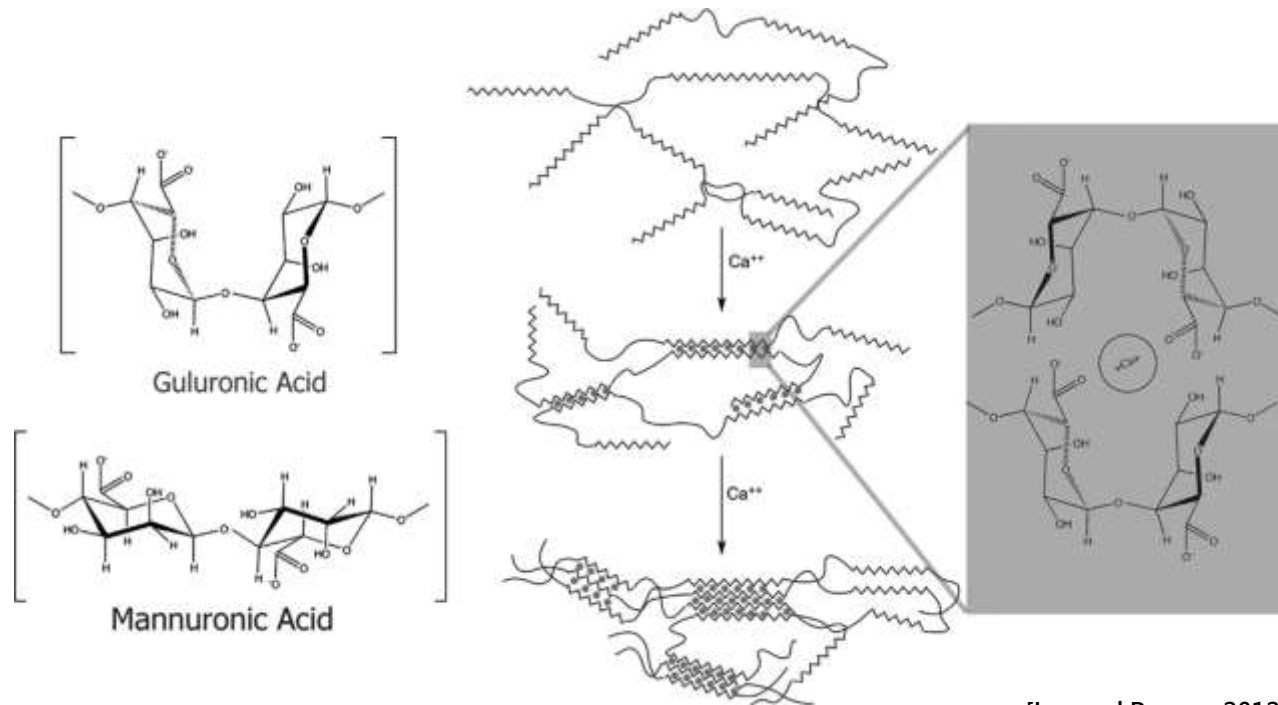




Molecular Gastronomy

Provide an opportunity for the students to act like a scientist to solve a scientific question

Students would be expected to provide critical and logical predictions in other aspects in sciences based on their findings



[Lee and Rogers, 2012]



MATERIALS

Calcium chloride (CaCl_2) (3.6 g), sodium alginate (SA) (1.0 g), water, dropper, syringe, tubes, spoon, plate, cups.

EXPERIMENTAL PROCEDURES

Dissolve CaCl_2 and SA separately in 50 mL of water, shake vigorously to facilitate dissolution.

Transfer the CaCl_2 to the transparent plastic cup.

Dilute the original SA solution in accordance with the following table, what are the new concentrations?

SA solution	Water	Final concentration of SA
15 mL	5 mL	%
10 mL	10 mL	%

Add a few drops of dye into each SA solution, swirl to mix.

Starting from the lowest concentration of the SA solution. Aspirate the SA solution using a syringe; add the SA solution into the CaCl_2 slowly with gentle swirling.

Collect your spheres with a spoon and put them on the plate.

Repeat with the other two SA solutions.



Questions for Discussion

Describe the appearance of the spheres formed from the different concentrations of SA solution.

Gently press the spheres, are they soft? How does the texture of the spheres change after 10 minutes?

Which concentration(s) of the SA solution is/are suitable for spherification? Explain why spheres could not be formed at other SA concentration(s)?

What would you expect to occur in the spherification process if the procedures were carried out at

- a) low temperature (e.g. 4°C); and
- b) high temperature (e.g. 80°C)? Explain your answers.



Prospective Students / Graduates

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THEi Info Day

24 & 25 Nov
THEi (Tsing Yi) &
THEi (Chai Wan)

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