

UStemist - Team 11 「必有我師」

Project Background

Community partner: The Y.W.C.A Hioe Tjo Toeng College

Participants: A group of Form 2 students

Characteristics: Well-behaved, smart but passive in learning



Learning Objectives

Knowledge	Skills	Attitudes
1. Examine the nutritional value of different food	1. Design food menu for a specific group of people	1. Appraise the STEM development in our society
2. Criticize the health problems and describe the nutritional needs of different people	2. Develop a problem-solving mindset to solve different daily life problems	2. Experience trials and errors
3. Discuss the basic principle of molecular gastronomy	3. Experience from making molecular gastronomy	



Preparation work

- Activity Plan
- Note sheet / Lab manual
- Preparation of lab materials
- Pre-lab



Workshop details

Theme: Food Industry (Total 2 workshop)

Learning approach: Learning → Exploration → Application

1st workshop: Food Industry

STEM focus: Problem-solving

Aims: Facilitate students' creativity & Enhance their understanding of STEM

Duration: 1 hour 15 mins

No. of students: 25

Task to do: Poster Design

Major question: How do we make some new food which have a greater nutritional value?



2nd workshop: Molecular Gastronomy

STEM focus: Hands-on making

Aims: Make students feel that STEM is around us

Duration: 1 hour 30 mins

No. of students: 19

Task to do: Molecular Gastronomy

Major question: Why is molecular gastronomy important to our society?



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Evaluation

1. Teachers' feedback

- ◆ The team has **put effort** on how students could enjoy the STEM program.
- ◆ They have made **meaningful pedagogical decision** in their planning.
- ◆ Students were **enjoyed and stimulated**.
- ◆ The activity is **unique and precise**.

2. Professor's feedback

- ◆ It was amazing to see university students teaching STEM to high school students.
- ◆ There were apparently **no age or communication gap** between the “teachers” and the “students”.
- ◆ With **hands on activities and topics related to everyday life**, the project could **successfully engage student participants**.

3. Students' feedback

Students' responses (16 responses)	Average Marks (lowest:1, Highest: 5)
1. I can know more about what STEM is.	4.5625
2. I know more about the nutritional value of different food.	3.8125
3. I can develop a critical mind to analyze different cases.	4.25
4. I understand more about molecular gastronomy.	4.5
5. I can be motivated to learn more.	4.375
6. I enjoy the workshop.	4.5

Limitations and Difficulties Encountered

- Students with low motivation
- Limited workshop time
- Methods to raise students' interest
- Materials and apparatus for the lab session
- Lots of uncertainties before the workshop

Our Reflections.....

- Chance to serve, to learn and to thrive in the secondary school
- Reflect what STEM is
→ Student-centre, Hand-on experience, Creativity
- Be flexible, Be ready to change
- Reflect on teaching styles

Conclusion

Both workshops are successfully held and we may be invited by the other schools to hold the same workshops. Although there is still a room for improvement, we have already tried our best. STEM is not only about one or two workshops in school, but it is a kind of life attitudes. What we are doing is trying to instill a mindset of “think and do something impossible”.