

## Exploring New Scientific Developments and Demonstrating Concern about Their Impact on Society (Secondary 4 - 7)

**Curriculum: Biology \* (under revision)**

**Topic: Genetics/Nutrition - Genetically modified food**

**Emphasis: Informed decisions in science education**

\* *The suggested activities may be adapted for junior secondary students in learning the topics: Diversity of Plant and Animal Life and Food Substances in Science (S1-3).*

### ***Would you avoid GM foods?***

- Science education encourages students to explore new scientific developments and related issues. Genetically modified food (GM food) is a typical topic that is recently drawing wide public concern.
- The following are student-centred activities focussing on GM food, for developing students' high order thinking skills in making informed decisions based on scientific evidence. The learning activities will develop students' generic skills, such as communication, IT, collaboration and critical thinking through searching for information, analyzing problems, reasoning arguments and presentation. Students are also encouraged to keep an open mind but remain skeptical.
- Other than showing an awareness of the principles and technology used in producing GM foods, students have to evaluate the potential benefits and hazards, as well as ethical issues associated with genetic modification.

#### **Step 1**

##### **Theme of activity / Question posed to students**

Initial opinion and decision

Q.1 - "Would you avoid GM foods? Why?"

##### **Suggested Learning Activity**

- Students are free to express their opinions and make an initial decision on whether they would avoid or accept GM foods based on their prior understanding of the issue.

**Step 2****Theme of activity / Question posed to students***Categorizing people's views on GM Foods*

Q.2 - "Do we have different viewpoints towards GM foods? If so, what are the major concerns and views?"

**Suggested Learning Activities**

- Students collect their classmates' opinions and pool together the reasons behind their decisions.
- By categorizing their decisions, students can react to various viewpoints and reasons, and reflect on their own stance.

**Step 3****Themes of activities / Questions posed to students***Finding out more about GM foods*

Q.3 - "Are the opinions of different individuals supported by evidence?"

Q.4 - "What background information on GM foods would you like to examine before arriving at any conclusion regarding Q.3?"

**Suggested Learning Activity**

- Students are asked to search for more scientific facts and evidence on GM foods from the library/ Internet. They will probably touch on potential benefits, safety issues, myth and facts, and the labeling of GM foods.

**Step 4****Themes of activities / Questions posed to students***Sending one's opinions to relevant organizations/ departments about the safety and labeling of GM foods*

Q.5 - "After examining the relevant background information, would you like to refine your previous viewpoints in Q.1?"

Q.6 - "If you are going to send your opinions about the safety and labeling of GM food to the Food and Environmental Hygiene Department or participate in the Polling of the BBC online network, how would you present your viewpoints in a rational manner? "

**Suggested Learning Activities**

- Students are encouraged to review their initial viewpoints with the relevant information acquired.
- Students present their evaluation of the facts and evidence. The class can be divided into two groups according to their decisions. Representatives from those who avoid GM foods and those who accept GM foods share and debate their views.