

## Plastics: what can we do?

### 1st teaching period

#### **1st Activity: Introduction**

Time: 15'

Type of activity: introduction activity and brainstorm activity

Class organisation: class work

Actions/Tasks: First of all, the teacher introduces the new unit: we are going to talk about organic chemistry and we will focus on some products around us: food and plastics. But what do they have in common? The teacher raises a brainstorm: ask students to think and write down food and objects made of plastic around us. Food and objects made of plastic can be collected in a padlet or power point.

#### **2nd Activity: Let's investigate about organic compounds**

Time: 25'

Type of activity: investigation.

Class organisation: pair work

Actions/Tasks: The teacher suggests that students do the following research: on the one hand, they should look for a picture of the food pyramid and identify the nutrients in the food, and, on the other hand, they should look for objects made of plastic that have the different identification symbols (they can finish the activity at home as homework in order to have more examples).

#### **3rd Activity: organic compounds**

Time: 10'

Type of activity: share information

Class organisation: groups work

Actions/Tasks: Student couples may join in groups of 4 or 6 to share their research, exchange impressions and evaluate each other.

#### **4th Activity: Food and plastics, what do they have in common?**

Time: 10'

Type of activity: forum.

Class organisation: pair works

Actions/Tasks: After the research, students should answer the forum question: what do you think the nutrients in the food pyramid and plastics have in common?

### 2nd teaching period

#### **1st Activity: Organic compounds**

Time: 15'

Type of activity: review activity

Class organisation: class work

Actions/Tasks: From the responses of the forum and seizing like examples the food and the

objects of plastic collected at the brainstorm, the teacher can introduce the concept of polymer, macromolecule and organic compounds.

### ***2nd Activity: Macromolecules in our life\_1***

Time: 20'

Type of activity: video and activities

Class organisation: class work and individual work

Actions/Tasks: Teacher can explain the concepts of macromolecules and polymers, as well as introduce the chemistry of the carbon taking into account the level of learning of the students. It may be useful to watch a video like [Polymers video](#) (TED: "From DNA to Silly Putty"). The video explains what is a polymer, which types there are, etc, but also introduces the problematic of the recycling and the pollution that will treat at the following section.

### ***3rd Activity: Macromolecules in our life\_2***

Time: 15'

Type of activity: moodle activities (organic compounds food in food and polymers)

Class organisation: individual work

Actions/Tasks: Moodle activities about macromolecules at food and macromolecules in plastics.

### ***4th Activity: introduction to plastic pollution***

Time: 5'

Type of activity: review and introduction

Class organisation: class work

Actions/Tasks: Review activity to see the great advance for society that has turned out to be plastics. But now is the time to look at the negative aspects too, and we must therefore introduce the contamination of plastics which will be the next activity to be carried out.

## **3rd teaching period**

### ***1st Activity: plastic pollution\_introduction***

Time: 5'

Type of activity: video and introduction activity

Class organisation: class work

Actions/Tasks: The video [Uninhabited South Pacific island](#) is screened to create some impact and initially explore how it is possible that there is a lot of plastic debris on a desert island. .

### ***2nd Activity: plastic pollution\_text***

Time: 15'

Type of activity: reading comprehension

Class organisation: individual work

Actions/Tasks: students should read an article of National Geographic journal about Plastic pollutions ("[The world's plastic pollution crisis explained](#)"). There are some interesting video-views in the article too. They may take notes for answering quiz activity.

### **3rd Activity: plastic pollution quiz**

Time: 10'

Type of activity: quiz activity in moodle

Class organisation: individual work

Actions/Tasks: students answer quiz activity about National Geographic article.

### **4th Activity: What are we doing?**

Time: 25'

Type of activity: moodle activity / activity sheet plastic\_pollution\_what\_are\_we\_doing?

Class organisation: groups of 3 or 4

Actions/Tasks: using the example shown in moodle, students must upload a table to study ten of the objects made of plastic analyzed the previous days, find the plastic identification code, name, some properties, and express what they do with the object when it ceases to be useful.

## **4th teaching period**

### **1st Activity: What action is being taken from Europe?**

Time: 5'

Type of activity: introduction activity

Class organisation: class work

Actions/Tasks: The teacher can show some headlines relating to use and recycling in Europe (moodle activity: presentation plastics in Europe).

### **2nd Activity: Plastic in Europe presentation**

Time: 20'

Type of activity: moodle interactive presentation and reading comprehension

Class organisation: individual

Actions/Tasks: The student must follow the interactive presentation of moodle (Plastics in Europe), reading the articles that are linked and answering some of the questions. It is a reflection activity that will serve them to see what action is being taken in Europe and what we can do on an individual level to reduce plastic pollution.

### **3rd Activity: what can we do?**

Time: 30'

Type of activity: final activity: workshop

Class organisation: groups of 2

Actions/Tasks: As a final activity, students can choose from one of the proposals teacher prepares. They have to upload the activity they decide to do as a single file.

Examples of Proposals:

- Decalogue of the actions they will take from now on as citizens with regard to the use of plastic.
- Decalogue for actions to be carried out as a city or neighbourhood with regard to the use of plastic.
- Plastic usage awareness triptych for their neighbours
- Plastic usage awareness poster for their neighbours

**4th Activity: peers assessment**

Time: 10' (or homework)

Type of activity: peers assessment (workshop activity)

Class organisation: individual

Actions/Tasks: Within the workshop activity, each student evaluates their work and those of the partners assigned by the teacher

**Suggestions for future development and expansion of the scenario**

***Vocabulary revision/Practice***

Students/teacher may create crossword or a bingo for playing with other students:

*moodel activity or <http://www.crosswordpuzzlegames.com/create.html>*