

# We Are What We Eat

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Innovative Pedagogical Scenario On Food and Consumption Trends and Opportunities

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## KA2 Partnership Projects



ITALIE



FRANCE



FINLAND



CZECH REPUBLIC

# GMO

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On Monday 23rd April 2018 we had a lecture about GMO by Mgr. Tomáš Moravec PhD. He studied in Charles University in Prague. Nowadays Tomáš Moravec is the head of the laboratory of biology in the Institute of Experimental Botany AS CR. He also publishes material for students. He has published 28 books so far.



He tries to make a vaccine against oncogenic Human Papillomavirus.

Tomáš Moravec was talking about GMO for 2 hours. We found out that GMO means genetically modified organism or micro-organism whose genetic material has been altered to contain a segment of DNA from another organism. Modern recombinant DNA technology enables the „stitching together“ of pieces of DNA, regardless of the source of the pieces.

Since 1980s, this technology has been used extensively in the lab by researches for countless purposes: to make copies of genes or proteins, to determine gene function, to study gene expression patterns, and to create models for human disease.

The most common found GM crops in the US are soya, corn and cotton.



Most of public information about GMO is false, because it comes from fake sources. People should look for sources which come from scientists. If they want better sources they can use a word „transgenic“ instead „genetically modified“, because the scientists use this word.



In very hard natural conditions genetically modified crops are the only ones which are able to survive. It's advantageous for us because original natural plants are smaller and poorer in nutrients.

But! Many people think GMOs are bad or controversial because the companies have to use a lot of chemical products to protect their crops and their growth.

### **Our opinion?**

This is very controversial topic, Czech and Finnish students are thinking GMOs are good because they are resistant and strong enough to survive in difficult conditions (e.g. in Africa, South America,..)

French and Italian students are thinking GMOs are noxious for nature, organisms and for us, too because they contain a lot of chemicals.

And what do you think about GMOs?



# Science center

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On Wednesday 25th of April we visited the science center in Gymnasium Havlíčkův Brod. We saw many interesting experiments including food and chemical substances. There were three stages: biochemical laboratory, IR spectrometer and microscope.

## Biochemical laboratory

Mrs. Marie Vlková, chemistry and biology teacher, introduced us to the experiment.

We did substance analysis. We wanted to prove the presence of sugars and proteins in various food. For sugar proof we had honey, milk, grapes, apples, olive oil and oranges. We extracted juice from fruit and poured it into tubes separately.

We did the same thing with milk, olive oil and honey. Then we added Tollen's reagent, which contains silver. We mixed it and shook the tubes. We put

them into hot water and moved to next experiment with proteins. There we had milk, starch, egg white, cheese, yoghurt, soya milk, protein and chicken meat. Some food we had to mix with water and then we put it into the tubes.

We proved the presence using biuret test. We add sodium hydroxide and copper sulphate to every tube. If proteins are present in the food, the substance turned violet. We found out that everything except starch include proteins. We moved back to the sugars. Every tube turned black or formed a silver mirror so we knew that every food we used contains sugar, even the olive oil.



## IR spectrometer

Mr. Jiří Karel, chemistry and biology teacher, showed us IR spectrometer and how does it work. IR spectrometer uses infrared radiation to find out the content of the examined substance. It send infrared rays through the substance and than register unique reaction of the substance.

The device can then compare the reaction with the database. We tried it on polyethylen and it worked well. Than we crushed a pill and we mixed it with potassium bromide. We obtained a powder and we pressed it with some device. This proces created another small pill. Then we put it into the spectrometer and find out that it is made of paracetamol.

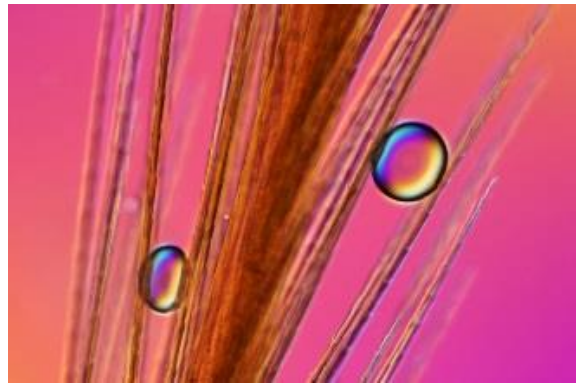




## Microscope

Mrs. Pavla Kotnová, also chemistry and biology teacher, showed us samples of sugar, salt, caffeine and vitamin C. We examined them under a microscope and changed the light and the colors on the monitor. The crystals of the salt looked like a shape of a octahedron. Then we made our own sample of starch from

potato. We cut a slice of it and spread it on the slide of glass. Then we added a few drops of water and put a slide on top of the water. Then we put it under the microscope and we saw that the starch looked like a shell. After that Mrs. Kotnová showed us some pictures of different experiments under the microscope that looked like art. She told us that the microscope was very expensive, 600 000 Kč or 24 000 euros.



# Czech cuisine: a surprise for foreign students

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Czech cuisine is usually unhealthy. It includes a lot of sugar and fat, but we love it. On the other hand, Czech dishes have good quality. Compared to other countries Czech dishes are usually made using meat especially pork and beef. Schnitzel, pork with dumplings and sauerkraut are traditional dishes in Czech Republic.

**Experiences during our stay in Czechia:** For breakfast we have eaten same things than in our countries. Snacks between breakfast and lunch have been a new thing for Finnish and French people. For snacks we have eaten sandwiches and fruits or vegetables. For lunch we have eaten potato soup (bramboračka) and schnitzel with potatoes (řízek s bramborem). After lunch we have eaten snacks again. For dinner we have eaten meat with potatoes, rice or dumplings.

On Tuesday (24. 4. 2018) we went to Prague and visited a private brewery there. After that we went to a restaurant called „U Fleků“ where we ate traditional Czech dishes. First course was potato soup. The main dish was marinated sirloin (svíčková na smetaně) with dumplings. The dessert was štrůdl with apple and cinnamon.

Finnish students didn't like the main dish in restaurant on Tuesday because it was very different than their traditional dishes are. Italian students didn't like the first course because they don't usually eat soups. French students liked all the meals.





There are lots of differences between Italian food and Czech food. Italian people eat pasta almost every day and have less vegetables than Czech people. Italian people do not eat sweets as a main dish. Italians eat their dinner later than Czech people. Czech people usually eat their dinner at about seven o'clock and Italian people generally eat their dinner at half past eight. A difference between French food and Czech food is that French people eat more cheese and drink red wine. French people eat soup only in winter. In Finland people eat more fish and vegetables than people in Czech do.

**Traditional dishes in Czech Republic:** Let's introduce the most popular dishes. For soup Czech people usually eat garlic soup (česnečka) or chicken broth with noodles (vývar s nudlemi). After soup Czechs eat roast pork with dumplings and cabbage (knedlo-vepřo-zelo) or beef with tomato sauce with dumplings or pasta (rajská omáčka). A typical Czech desserts are buchty, koláče and bábovka.



# Beer: traditional Czech product

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There are six big tanks in the room. The room is really cold, only five degrees celsius. This is where the fermentation takes place before the beer is served to the customers of the biggest restaurant of the country.

Beer is a drink made from water, hops, yeast and malt. It has a really big tradition in Czech Republic. The first Czech beer was brewed in Břevnov monastery in 993.

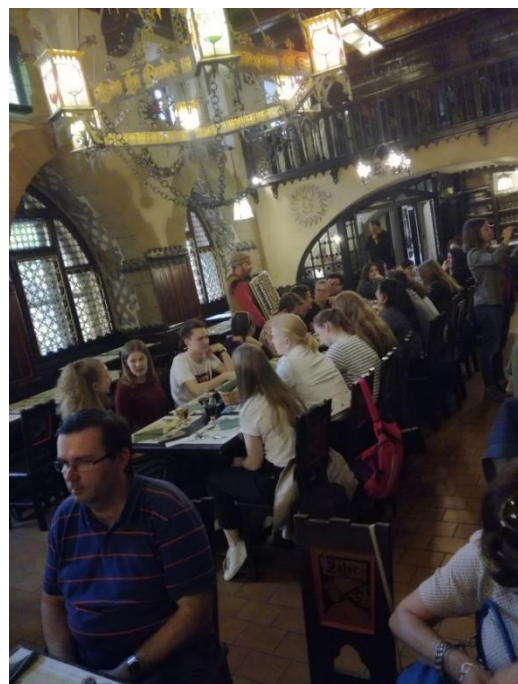
Why is beer so popular in Czech? The answer is simple. It is an old tradition for the Czech people. It used to be even healthier than water.

Beer is made by brewing. First malt is mixed with hot water. This is called mashing. Then hops are added during boiling. The hops give the beer aroma, flavor and bitterness. Next the beer is cooled down and then the yeast is added. Now the fermentation starts and it

lasts for several weeks. During this the wort becomes the real beer.

We visited a small brewery U Fleků in Prague. It is one of the oldest smaller breweries in Central Europe which has been brewing continuously for over 500 years. U Fleků was founded in 1499.

We had a tour of the brewery with a guide who works there. He was speaking several languages and it was really interesting. After the tour we received presents, beautiful glasses. Then we had lunch at the restaurant U Fleků. We ate a traditional Czech meal called Svíčková or vegetarian version of the meal. It was delicious and we enjoyed it. Also there was a guy who was playing accordion. He played songs from Italy, France, Finland and Czech Republic.



# Healthy diet

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We had compared couples of food and tried to decide which one is healthier and which one is unhealthy.



First we compared Wilder Sanddorns and Skittles. We decided that wilder Sanddorn is healthier because it has less additives than skittles. In fact, wilder Sanddorn has no additives and skittles has eight additives.

In second couple we compared Choceňský yogurt (it is one of the most popular in Czech and also one of the most common) and yogurt from Albert (Albert is usual Czech store). We decided that Choceňský yogurt is healthier, because it has more proteins and less carbohydrates and lipids.

Next we compared raspberry lemonade and Clever orange lemonade. We learned that Clever orange lemonade is healthier because it has less sacharides than raspberry lemonade.

After that we compared Clever baby fruit and Andres baby fruit. Andres baby fruit is healthier because it has less sacharides, proteins and lipids than clever baby fruit and it has no additives.

The next pair was Bebe biscuit and carob biscuit. Carob biscuit is healthier, it has maybe more lipids but it has less sacharides, proteins and additives.

And last but not least there are Lindt chocolate and Basic chocolate. Lindt chocolate is healthier because it has less sacharides and it has bigger energy value



We wouldn't recommend consuming Wilder Sanddorn and Lindt chocolate because it's a candy but maybe in days when you want something sweet, it can be useful. We would recommend eating Creamily yogurt Choceňský

for breakfast, snack or dinner because it is made from milk and it has lots of proteins. We would recommend not drinking Clever orange drink, it is unhealthy. We would also recommend eating Andres baby fruit as a snack, but little kids can have it for breakfast too, it is just a mashed apple. And last we would recommend Carbo biscuit as a snack because it's healthy.



We put together ideal menu for one day.

We tried to make it as much healthy as possible.

## **IDEAL MENU FOR ONE DAY**

### **BREAKFAST**

Cereals with milk or with yogurt, orange juice, tea or coffee, bread with butter and cheese  
(for Finns, because they do not have 1st snack)

### **1ST SNACK**

Bread with marmalade, apple or another fruit

### **LUNCH**

Fish with potatoes or rice and some vegetables, water or tea

### **2ND SNACK**

Roll with butter and ham and some fruit

### **DINNER**

Pasta salad with vegetable, water

# Prague Trip

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Our trip started at 7.30 am on Tuesday 24th of April. We went to the capital city of Czech Republic – Prague. We visited The Vítkov monument at first. When we arrived there was a guy who showed us the monument. We were there for an hour and a half. The visit was really interesting. We saw some graves of soldiers. We saw a chapel and the president’s meeting room. After that, we took some pictures of monuments and then we went to the bus that drove us to the city centre.



In the city centre we visited a small brewery. It is called the „U Fleků“. The teachers tasted the local beer. It was really good, they said! We had lunch at the restaurant „U Fleků“ too. It's the biggest restaurant in the Czech Republic. We had typical food from the Czech Republic. We ate potato soup, and as main dish we tasted the „svíčková“.

We enjoyed it a lot. At the end of our lunch we tried „štrůdl“. it is a dessert based on apples. There was a musician who played an accordion, while we were eating. It was an exciting experience.



We saw the main square of Prague - „Václavské náměstí“. There we had some free time, and a lot of students went shopping. We arrived to Prague castle through Charles bridge, where we had some spare time again. After we explore all the monuments around Charles bridge we went to Prague castle. After hard way to the hill we were on the place. In front of Prague Castle police mens



checked our bags and we could go inside. We didn't enter in the castle. The building was very awesome from outside.



The trip was very nice and interesting, but we were very tired after whole day. We think everybody enjoyed Prague.

