# alimentarium

# **Food** The essence of life





www.alimentarium.org

# **Practical information for schools**

# Museum opening hours

Summer (April - September): Tuesday to Sunday, 10:00 - 18:00 Winter (October - March): Tuesday to Sunday, 10:00 - 17:00

# Admission

# To visit the permanent exhibitionAdultsCHF 13.00Reduced rateCHF 11.00Children 0 - 5 years oldFree of charge

Children 6 - 16 years old CHF 4.00 Family ticket CHF 28.00

### **Guided tours**

Fixed price (12 pupils) CHF 100.00 (includes admission for the pupils and one accompanying adult)

The Alimentarium also suggests guided tours of the garden and a range of workshops for schools, promising new discoveries while having fun. More information available on: www.alimentarium.org.

# **Getting to the Museum**

#### By train

Vevey CFF/SBB railway station, then bus 201 or 202 heading East (towards La Tour-de-Peilz/ Montreux) to the *Hôtel-de-Ville* bus stop or 15 minutes' walk along the lakefront towards Montreux.

#### By bus

VMCV bus number 201 or 202:

- heading East (towards La Tour-de-Peilz/ Montreux) to the Hôtel-de-Ville stop
- heading West (towards Lausanne) to the *Cour-au-Chantre* stop.

#### By car

Via the A9 motorway (from Geneva or the Valais) or the A12 (from Bern), exit at Vevey. At the roundabout, follow 'Vevey Centre'. The Panorama underground car park and the *Place du Marché* are less than 10 minutes' walk from the Museum.

#### By boat

CGN public transport:

- From the *Vevey-La Tour* quay, walk westward (towards Lausanne) for 5 minutes
- From the Vevey-Marché quay, walk eastward (towards Montreux) for 10 minutes.



# An introduction to the exhibition

This guide has been specifically designed for schools and covers the time before, during and after a visit to the Alimentarium.

# Some information to help you prepare your visit...

The exhibition does not have to be visited in any particular order. This means that if one sector is busy, another can be visited instead. In each of the three sectors, pupils can choose from several different stations.

The Alimentarium aims to become a global benchmark on human food and nutrition across the world and through the ages, with an interconnected physical and digital learning platform. (see https://academy.alimentarium.org/en)

Suggested duration of a visit: 1 to 1.5 hours

Recommended age: 9 years and over. The teachers' guide meets the main objectives of the 'Body and Movement' part of the school curriculum in French-speaking Switzerland (*PER Corps et mouvement*) and the *Lehrplan 21* in German-speaking Switzerland.

# What does Food – The essence of life talk about?

The Alimentarium's new permanent exhibition invites visitors to answer three key questions: What do I eat?, How do I eat? and Why do I eat? This naturally leads us to contemplate on food, society, and bodily functions and their interdependence with nutrition. The exhibition is structured around **three main axes**:

The Food Sector = Me and the outside world The Society Sector = Me and other people The Body Sector = Me and my body

These three axes correspond to three distinct areas in the exhibition, each designed to

encourage participation and interactivity. Pupils will have all their senses stimulated as they read, listen, look and express themselves as they experiment.

# The Food Sector

Where does food come from and how is it produced? How can we transport it? How can we ensure we have food to eat in winter? What methods do we use to cook, prepare or present food to make it tasty and appetising? In this first sector, pupils will explore the world of food to answer the fundamental question **What do l eat?** 

The first area immerses pupils in idyllic countryside. Surrounded by interactive screens, they witness accelerated images of food in the making, from its development to its packaging, through the growth of maize and hops, the rearing of pigs and sturgeon and the gushing of fresh spring water. After discovering the infinite variety of our food, pupils move on to focus on production and the different food systems found across the world. Objects used for gathering food, hunting, rearing livestock or crop farming are put into context and can



be viewed three-dimensionally on tactile terminals. To discover the journeys food makes after it has been produced, pupils can interact with a video wall which lights up according to the path selected. What better fun-filled way to learn about the different methods used for distributing, transporting and tracing food?

Talking about how food is produced and transported is enough to whet the appetite, but, before food reaches our table, it first needs to be processed. To help pupils understand how our food is manufactured, preserved and prepared and the traditional and industrial processes this entails, the next area showcases more exhibits, presents interactive terminals and projects personal stories on film. There is also a fun introduction to cooking, thanks to a large tactile table with interactive games involving recipes and culinary techniques. Let's not forget the examples of packaging on display! As the industrial production of food developed, the contact between producers and consumers was lost. The visual component of wrappers became a favoured medium for communication and packaging served to tempt and reassure, be both useful and attractive.

The Society Sector

Throughout the *Society* sector, pupils discover how food connects us to our own kind. The

human diet is a social and cultural indicator, giving us clues to help us understand both ourselves and other people. Whenever we share food, we create links, display our social status, ritualise practices and perpetuate a tradition of conviviality. It is a subtle way of talking about ourselves and of measuring ourselves against others, whether we are the host or the guest. This sector favours the sharing of knowledge and experiences and focuses on discussion, starting with the question **How do I eat?** It shows that eating is not only a biological need, but also an act which fulfils an essential social function.

Pupils can enter a cocoon filled with photos and personal accounts and will realise the extent to which our education and our family circle shape our relationship with food. A community wall invites them to explore new social phenomena, such as the term 'food porn' or the use of hashtags. From New York to Seoul, #pizza, #burger or #bulgogi reflect our cosmopolitan culinary discoveries and cravings. However, the silence from certain parts of the world reveals other realities and food boundaries...

Pupils may wish to share or 'like' memories and tips in a special terminal to expand the Alimentarium 'Proust's madeleine', a sort of memory bank created for and by visitors.

Addres bacadhaus!

Continuing the tour, pupils will realise how their choices and habits are also determined by much wider cultural and social spheres, converging from a rich array of influences. Every society, every culture, defines what it deems as authorised food, its taboos and its rituals. In addition to religious taboos, our era has witnessed the emergence of new alimentary precepts (less salt, less sugar, etc.). A collection of large-scale photos highlights the diversity of eating habits across the globe and over the centuries. What are the consequences of our food choices on our health, the environment and on other people's lives? Why do we crave for more?

An interactive table presents several games on tableware and table manners in different cultures, inviting pupils to learn about some of these fundamental values. To end the tour, they find themselves confronted by a large wall of lively and colourful images, along with a range of objects from the Museum's collection. This area evokes the richness of different rituals, festivals and places where we eat across the globe.

## The Body Sector

The last part of the visit, the *Body* sector, invites visitors to reflect on three fundamental questions: What do I think about what I eat? **Why do I eat?** What impact do my choices have on my health?

In the first area, pupils wander through the pathways of the brain dotted with giant neurons to discover how our five senses work. This fun trail reveals that we can exercise and improve our grey matter at any age! Some hands-on and tasty experiments show that sometimes our senses may mislead us or be misled and that our education and our geographical, family and social environment have a major influence on our food choices and preferences.

Have you ever wondered what it would be like to travel through the organs of the alimentary canal to discover the secrets of how it works? For a few minutes, pupils can 'become' an apple. Mashed, mixed and broken down by enzymes, they discover the essential role played by the food we eat in the construction, functioning



and protection of our bodies. In other words, how making sensible food choices is the best way to protect our health.

To round off the tour, pupils are invited to play while putting into practice what they have learned during their visit. The *GameRoom*, designed as a point of exchange between the virtual educational platform and the physical Museum, is an augmented reality, multiplayer gaming area. This immersive space invites pupils to move around a bit, or even a lot! In the *Digestix* game, visitors explore the mechanical and chemical functions of the organs of the alimentary canal. Meanwhile, *Nutrix* enables them to unravel the mysteries of the composition of food.

## As an appetiser, here are a few topics for discussion in the classroom

This comprehensive exhibition offers the opportunity to address an array of scientific and social topics. Here are some examples to get you started.

- > What does 'eating' mean to your pupils? If asked about why they eat, what do they reply?
- ...Because I am happy
- ...Because I am sad
- ...Out of habit
- ...To grow
- ...Because I am bored
- ...Because it's good
- ...For my health
- ...To be with my family
- ...To be like my friends

Depending on pupils' answers, we can see that eating is much more than a vital necessity. We are not just mammals responding to our stomachs; we also need to feed our being.

- > What are your pupils' eating habits?
- ...What do I eat every day?
- ...What do I like eating? What don't I like?

...Where and how do I eat? Alone, with friends, with my family, at home, in the school canteen, while watching TV?

Depending on pupils' answers, it is important to highlight that each of us is not a single, unique eater but rather a multiple consumer. Most of the time, we adapt to many different situations. We do not always eat in the same way during the week and at weekends, or during holidays. Celebratory moments are a pretext for eating differently and we do not behave in the same way when we are at the table with friends or with grandparents.

• To stimulate further discussion, visit the *Society* sector.

> Where does the food your pupils eat come from?

...Can they distinguish between local food and imported food?

...At home, do they eat a lot of fresh, tinned or frozen food?

It is important to realise that we do not always know the origin of all the food we eat, and we do not always know how it has been processed.

After food has been produced, it has to make its way to our plates. Locally, trade is more or less direct. On a global level, food circulates within complex food systems which respond to market demand. Food processing companies, transport companies, and distributors, as well as financial institutions and public services all play a role in the supply and trade of food. The globalisation of the food trade, industrial technologies and health crises have raised fears and questions among consumers. As a response to these concerns, traceability provides a means of guaranteeing food safety. We can thus follow the journey food makes, from the raw material to the finished product. meaning it can be quickly withdrawn or recalled in the event of a problem.

# • To stimulate further discussion, visit the *Food* sector.

### > What are our five senses? What do we use them for?

Our brain uses our five senses to invent the world. It creates its own image of the world using a stream of sensorial information. This information circulates through our body in the form of electrical impulses. When we eat, millions of pieces of information rush into our brain via our sensory organs. At the end of a unique process, a coherent image forms in our brain.

# • To stimulate further discussion, visit the *Body* sector.





# **Discovering the exhibition**

# THE FOOD SECTOR

Before starting their visit, pupils should ask themselves the following question: **What do I eat?** There are three main themes to this sector: Composition / Production / Processing

# Composition

This section uses interactive screens to present the diversity of food derived from nature. It shows the different natural stages of growth (production), then shows an end product created by humans (processing), before rediscovering the initial food source.

Look carefully at the sixteen sources of food on the big screens. Can you find eight end products? Here is an example to get you started: Wheat is used to make bread.

- 1. Vitelotte potatoes...
- 2. Water buffalo...
- 3. Durian...
- 4. Pig...
- 5. Sunflower...
- 6. Giant water bug...
- 7. Tilapia...
- 8. Wakame...

a packet of crisps a pizza with *mozzarella di buffala* ice cream *taillé aux greubons* pastry bottle of sunflower oil a fried snack fish fingers seaweed salad

# Production

While ants have always cultivated the soil and reared other species, human beings harvested and hunted long before they became farmers. They then improved techniques, produced more than necessary and traded the surplus. Industrialisation lead to the emergence of vast food production systems and our food now stems from all over the world.











Which object is the odd one out? The showcase on crops and livestock farming may help you. The octopus trap, from Portugal. This is the only object here that is used to catch an animal. The others are all used with plants.



What is this object used for?

- \_\_\_\_ To make giant ice cubes
- To grow cubic watermelons
- 🔟 As an aquarium



The Chinese invented this mould to make watermelons grow in the shape of a giant dice. Watermelons are then easier to handle and store, but they

also become more expensive. Cubic watermelons have become quite a trend and the Japanese are willing to pay a fortune for them.

The globalisation of food is not a modern phenomenon. Human beings everywhere have always been attracted to new ways of eating. The food that we eat in Europe today has been influenced by foreign civilisations.

Do you know where these foodstuffs come from? Link the food with its place of origin. The terminals that present food systems may be of help.

Saffron	$\sim$ /	Africa
Buckwheat		China
Tomato		Central America
Kiwi fruit		Europe
Corn		Near and Middle East
Watermelon		Central Asia
Cabbage		China, hence it is also called the 'Chinese gooseberry'
Pear		South America

In Switzerland, we eat food from around the world. Place the food in the correct place on the world map.

Oranges: Brazil
 Raisins: United States
 Hazelnuts: Turkey
 Rice: China

Notice the distance food travels to reach Switzerland.



# Processing

Most food undergoes some form of processing before it is consumed. Manufacturing makes cereals edible for example. Preserving makes storage and transportation possible, while preparing food includes cooking dishes. Such operations are performed by specialist artisans, industry or in our own homes.



What is this object used for?

To whisk egg whites

To make mayonnaise

To whip cream into butter

This churn was used to make butter. The handle turns the blade to keep the cream moving, while the curved base enhances the movement.

Various techniques for preserving food have been developed so that food can travel without losing its taste or nutritional qualities...

Link the preserving techniques used to transform different foodstuffs:

Smoking Fermentation Salting Appertisation Dehydratation Refrigeration



grapes to raisins fresh cod to dried and salted cod strawberries to jam fresh fish to smoked fish green beans to frozen beans milk to cheese

# THE SOCIETY SECTOR

#### In this sector, the most important question is: How do I eat?

What are my tastes, my food choices? How does society influence me? The human diet is above all a social and cultural indicator, which gives us clues to help us understand ourselves and other people. Eating is not only the main biological function, it is also the main social function. There are three main themes in this sector: Representation / Consumption / Eating habits

## Representation

By learning the codes of the social group in which they grow up, children assimilate the dietary and culinary rules which govern it. For example, in the West, they are taught that it is 'not the done thing' to burp at the table, while on the other side of the world, such behaviour is considered to be the height of good manners! By imitating the people around them, children forge their social ties and their feeling of belonging to a group.

There is something very warm and comforting about our grandmothers' recipes... In fact, if you think about it, we all have a recipe that has been passed on by a relative or friend and that still stirs up wonderful feelings when we taste its familiar flavours.

Mautarde de tenicho Brop: 4/12 d'eau 750g sucre candh Acarafi sel 300 p. de sucre 6 balans de ranelle, 8 us girofle, 8 anis faire auire le taut enc. 1 quart heure, culever la éfice, abacéré la mautarde daws 3 ourres de oin blanc 11 lant 200 g. de mantande, releve i feut de fuis rur disauche la farine

Write down your favourite recipe and share it with your classmates.

# Consumption

Our ways of consuming vary according to our desires, our needs and our means. Some types of food convey traditions that we keep alive through the acts of eating and cooking. Think of the various eating habits around the world. Which foodstuffs are consumed the most? Where, when and by whom?

# **Eating habits**

"Tell me what you eat, and I will tell you what you are." Brillat-Savarin's words sum up the individual and collective impact of our food choices. They stem from our culinary education within the family circle; they influence and derive from other factors such as our health and financial situation, advertising and environmental concerns. In short, other people's choices.

If you look at the ten photos taken by Peter Menzel on the terminal about eating in the family circle, you will notice that eating habits vary from one society to another, and that numerous factors influence the menu. The photographer presents families from around the world and the food they eat in one week.

Compare the food eaten by the Mustapha family (Chad) with that of the Casales family (Mexico). Why are there so many differences?

Drought means that the family in Chad has little food available. The Mexican family has weight issues as they consume a lot of heat-and-eat food and sweet drinks.

On the other terminal (lakeside), you can discover pictures of school canteens across the world. From the ten countries shown, which meal is most similar to what you eat at school? Which do you find the most appetising? Why?

Find the only meal with fish.

Since Japan is an island where fish is abundant, the Japanese eat a lot of fish. According to a local saying, a meal should always contain one ingredient from the sea and one from the mountains.

# THE BODY SECTOR

## This sector invites you to reflect on two fundamental questions: **How do I perceive what I eat?** Why do I eat?

To answer these questions, the first section looks at how the brain perceives our food, in particular through our five senses. You are also invited to discover the results of recent research in the field of sensory science. The second part focuses on how digestion works, the role of calories and the hormonal mechanisms which govern our relationship with food.

Two main themes are presented here: senses on call; nutrition and food.

# Senses on call

Our brain uses our five senses to invent the world! Try a little experiment for each sense.

#### SIGHT

Sight is responsible for 80% of all sensory perceptions. It enables us to instantly perceive and analyse a whole range of information: colours, shapes, movement and appearance. At a glance, we know if an apple is ripe or what its texture is like. The appearance food has influences how we react to food, hence the expression 'You eat with your eyes first'.

#### Link the following information regarding the visual aspects of a tomato.



#### TASTE

Our tongues help us identify the basic taste of food: sweet, salty, sour, bitter, umami.

List the food according to its predominant taste (sweet, salty, sour, bitter, umami). Pineapples / seaweed / clementines / coffee / walnuts / salt / sugar / bananas / grapefruit / vinegar / asparagus / jam / cauliflower / gherkins / cocoa / ham / cheese / endives / lemons / pears / crisps / honey / meat

- Sweet: sugar, honey, jam, pears, pineapples, bananas
- Salty: ham, cheese, crisps, salt
- Sour: gherkins, clementines, lemons, vinegar, grapefruit
- Bitter: endives, cocoa, walnuts, cauliflower, coffee
- Umami: meat, asparagus, seaweed

#### HEARING

The ear provides information on external noises, as well as on noises in the mouth. The sounds made by food are closely linked to its texture. Over a lifetime, the brain stores thousands of typical sound patterns, like the sound of an apple as we bite it.



#### SMELL

The nose identifies smells while our brain learns them, one by one. Over time, and thanks to its olfactory neurons, it is able to recognise between 3000 and 15 000 odours.

Smell the two odours presented in the exhibition, then think of what they evoke for you. A memory? A place? A person? etc.

#### TOUCH

Our skin provides us with a whole range of information about the texture and temperature of the world around us. When we feel or chew a piece of food, our muscles and joints work to contort or crush it. The perception of textures depends on the action performed.

Guessing a foodstuff from its texture...

- Soft: jelly, tofu, bananas, cake...
- Rough: cereal bar, rusk...
- Sticky: toffee, sweets...
- Hard: hazelnuts, cookies...
- Liquid: soup, juice...

# **Nutrition and food**

#### DIGESTION

What happens to food once you put it in your mouth? After cutting and crushing it with your teeth, you swallow it. It then embarks on a long journey which ends in the toilet! Between the mouth and stools, a mechanical and chemical process reduces the food into molecules small enough to be absorbed by the body. Approximately 95% of the absorption of nutrients occurs in the small intestine.

Label these organs on the diagram. If you want some help, go inside our giant digestive tube!

- mouth
- œsophagus
- stomach
- small intestine
- large intestine



#### REPRESENTATIONS OF A BALANCED DIET

The food pyramid is a way of using an image to explain how to eat a balanced diet.

Complete the sentences! Use the interactive station next to the digestive tube to help you.

In Japan, the pyramid is in the shape of a spinning top whereas in Benin, it is in the shape of a house. Pyramids don't just come in different shapes. They also vary in content.

Name a foodstuff that you find on the Benin pyramid but not on the Japanese one. crab, cassava, corn, prawns...

# Annual theme 2018 - 2019 : The faces behind food

As you walk around our reference exhibition, *Food – The essence of life*, you will find a wide range of objects, videos, factsheets and games linked to jobs for foodies. They are all part of the new annual theme, *The faces behind food*, where the spotlight is on the people behind these professions and the skills they use to produce the food we eat. Use this document to find the different stations that focus on the annual theme. Here's a little tip: Make sure you pay attention to everything highlighted in red!

# The Food Sector

A tool for each trade! Over the centuries, we have invented and developed numerous tools, utensils and containers of various shapes and sizes, ranging from the multi-purpose knife to specialised industrial machines. All these objects have been adapted to both the matter to be transformed and the hand that guides them. They provide the link between the producer and the food.

The large display cabinet is full of all sorts of objects from our collection. Do you know which utensil goes with which profession?

Match the objects in these pictures to a particular trade.



*Eureka!* Find this picture on one of the terminals devoted to the annual theme.



A 1950s futuristic representation of a robot butler by the artist and illustrator Arthur Radebaugh (1906-1974)

In our daily lives, we are increasingly reliant on machines and robots to communicate, move around and eat. The Japanese have even created robot dogs, called Aibo.

The term robot comes from the Czech word meaning work, labour or chore. Technological advances and the advent of robotics in industry in the 1960s created new professions and paved the way for a redefinition of tasks. This is when ready meals were first sold in supermarkets and tinned ravioli and tinned fruit and vegetables became popular.

Approximately how many electrical appliances would you say there are in your kitchen at home (e.g. a blender, a toaster, etc.)? Do you eat ready meals?

#### What do you think is the reason for these changes?

- a. To save time so that we can enjoy our hobbies
- b. To fill up the kitchen cupboards and fridge in case of an emergency
- c. To impress friends and neighbours

# The Society Sector

In this sector, you can see a 1950s-style kitchen. Take a moment to read the following short text:

Not so long ago, the kitchen was a woman's place of work, as most women did not have paid employment outside the home. Today, from a legal point of view, all professions are open to men and women. In practice, however, there is still a gender divide. While men are employed in most sectors, women generally work in professions related to the service, social, health and education sectors. Very few women work as butchers or in the fishing industry.

#### Why do such differences exist?

Several factors can explain this situation. Upbringing plays a particularly significant role as, for example, toys given to children from birth sometimes nurture preconceived and inaccurate ideas about what girls or boys should be or should like. This can go on to influence their choice of career in adulthood.

On the *Each to one's own!* terminal, look at the different adverts from the 1950s. **Find this one and compare it to the advert from 2017.** 



### Which slogans do the manufacturers use?

a. Quand je serai grande j'aurai une cuisinière F.A.R. comme maman!
(When I grow up, I'll get an F.A.R. cooker like my mum!)
b. C'est la fête des mamans (A great gift for mothers)

#### According to these two adverts, who does the cooking?

The mother

# The Body Sector

The second floor presents the work of a flavourist. Go over to the aroma organ.

Humans first started flavouring food thousands of years ago. The Egyptians seasoned and flavoured their food with herbs. As for the Romans, they used cinnamon and ginger. They also created certain condiments, such as garum, thanks to fermentation, a process still used today. Discoveries in chemistry during the 19<sup>th</sup> century led to the creation of synthetic aroma molecules, such as vanillin. Since then, the palette of aromas and flavours has continued to grow.

# When were these ingredients used to flavour food? To help you, choose between Antiquity and the contemporary era.

	Antiquity	20 <sup>th</sup> century
Cinnamon Ginger Matcha Myrrh Cypress Sichuan pepper Marigold Juniper Yuzu Baobab	Cinnamon Ginger Juniper Myrrh Cypress	Matcha Baobab Yuzu Sichuan pepper Marigold

When you are at the *Deciphering sensations* terminal, where you can learn about the day-today work of a sensory analyst, don't forget to eat the sweet you were given at the *Welcome Desk* and try the test.

A sensory analyst evaluates the sensations food triggers, so that the composition of food can then be adjusted to our particular tastes and preferences. However, to evaluate a product properly, analysts first need to create the right conditions and prepare their senses. **Underline some of the tricks they use!** 

- a. Blow your nose really hard before smelling the aromas.
- b. Smell the back of your hand for a few seconds before smelling a different product.
- c. Chew on a small piece of apple and rinse your mouth with water between two experiments.
- d. Eat a piece of dark chocolate and rinse your mouth with water before tasting a different product.
- e. Do the tasting in the dark.
- f. Put a red light in the tasting room.
- g. Present the food without its packaging.

The info in the terminal will give you more tips and tricks for tasting and analysing food!

#### TO SPARK DISCUSSION IN CLASS...

Eating is not a mundane act, it raises a number of important issues:

#### **Political issues**

How can we feed the whole planet when we know that one sixth of the world's population is going hungry? Technical advances and the globalisation of trade have only a small impact on the situation.

#### **Environmental issues**

How will we be able to feed ten billion humans in the future, without depleting natural resources?

In Switzerland, 2.3 million tonnes of food are thrown away each year. Food is wasted at every stage of the chain, from the producer to the consumer. How can we reduce food waste?

#### **Social issues**

What will be on our plates in the future? Less meat, more insects, functional food (food which is thought to improve our health), low-fat, low-sugar, organic, non-GMO food, etc.