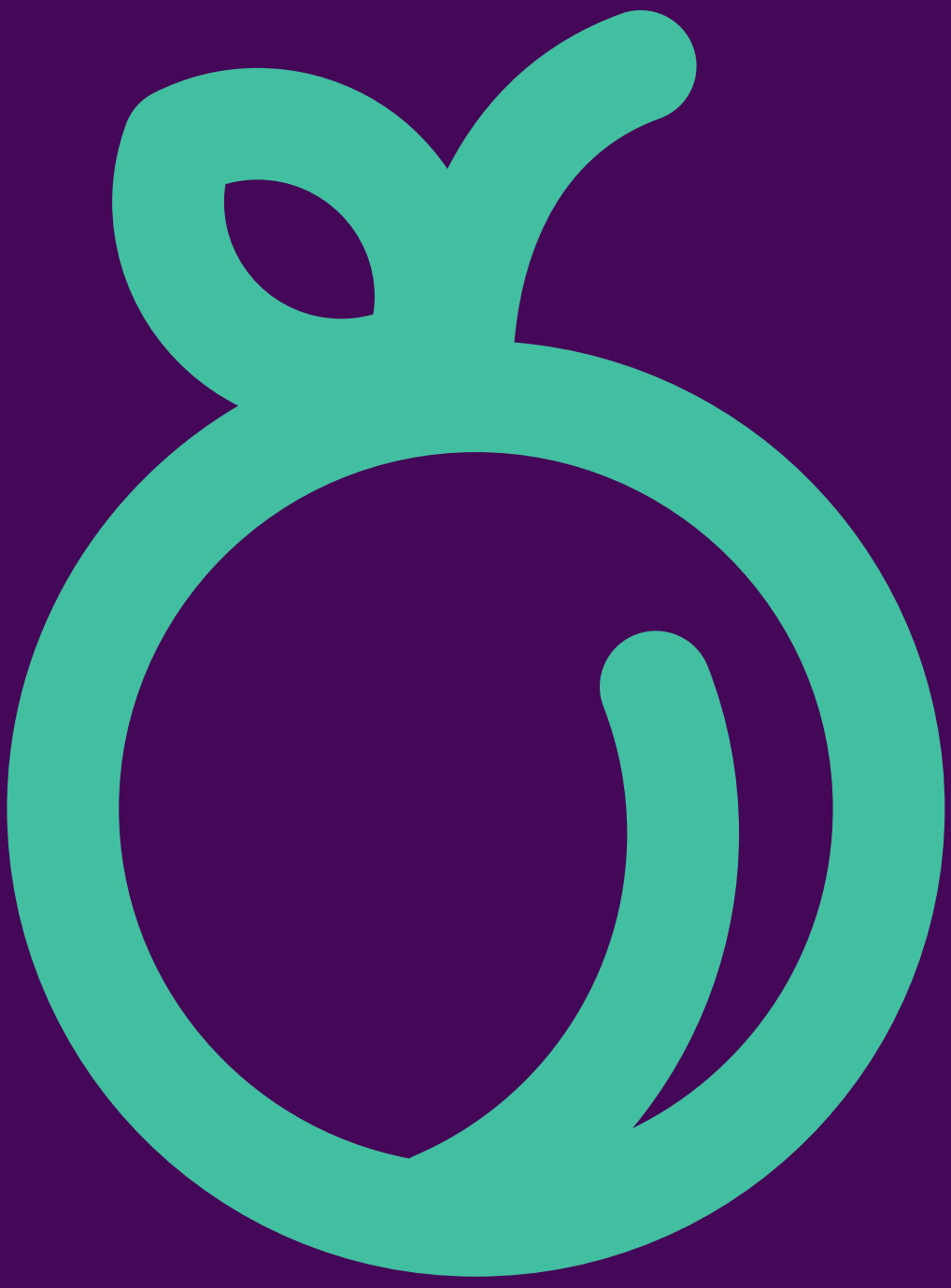
alimentarium

Food

The essence of life



Teachers' Guide

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 exhibition

Adults	CHF 13.00
Reduced rate	CHF 11.00
Children 0 - 5 years old	Free of charge
Children 6 - 16 years old	CHF 4.00

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://learning.alimentarium.ch/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 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 I 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...

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.

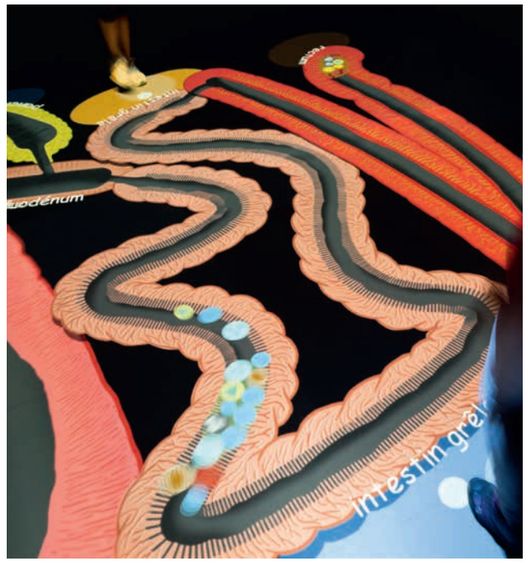
The *Body* Sector

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?

At the end of the corridor on the second floor, pupils discover how our five senses work. 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'm happy
...Because I'm sad
...Out of habit
...To grow
...Because I'm 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.

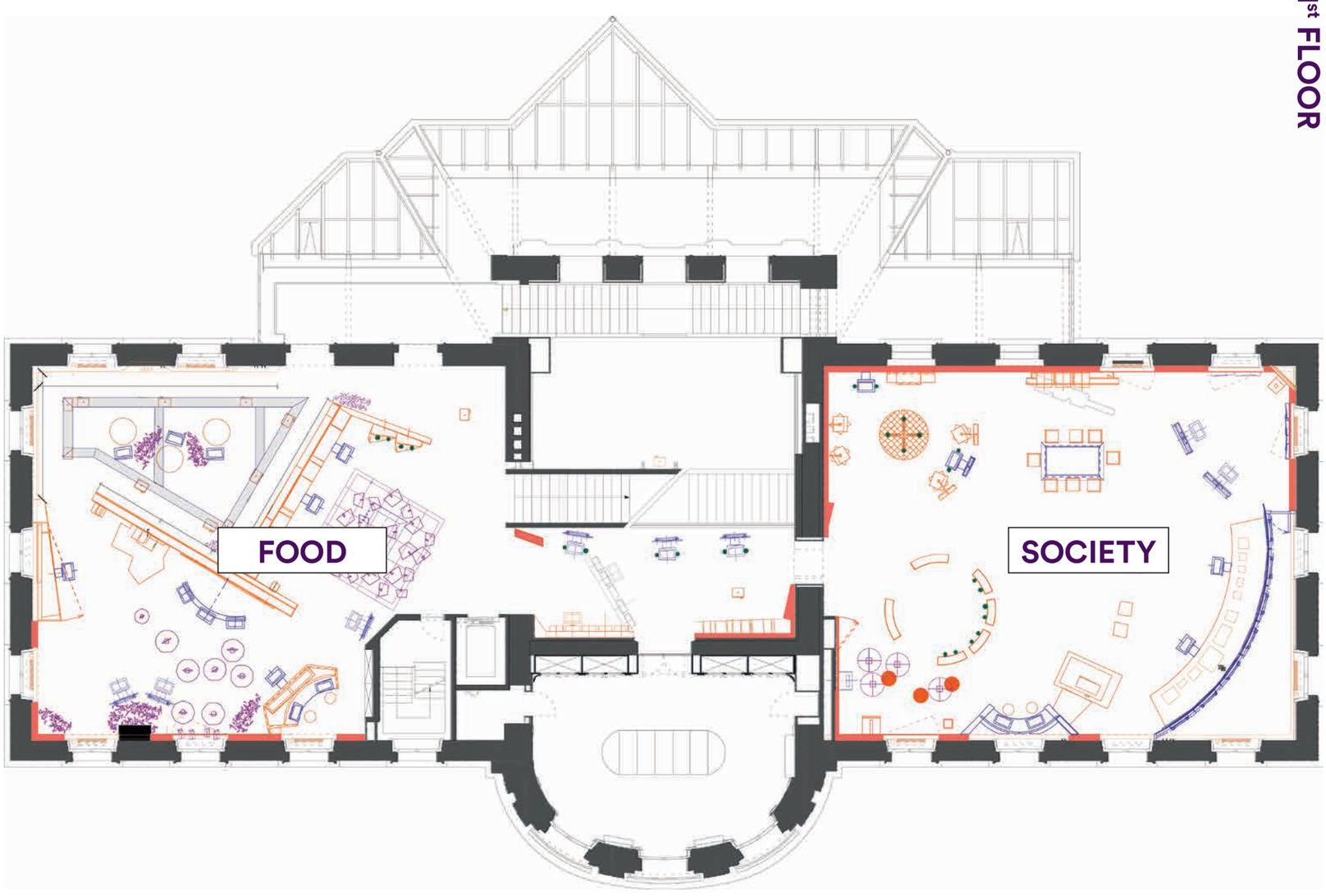
After food has been produced, it has to make its way to our plates. Locally, trade is more or less direct. On a global level, food circulates within complex food systems which respond to market demand. Food processing companies, transport companies, and distributors, as well as financial institutions 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.**

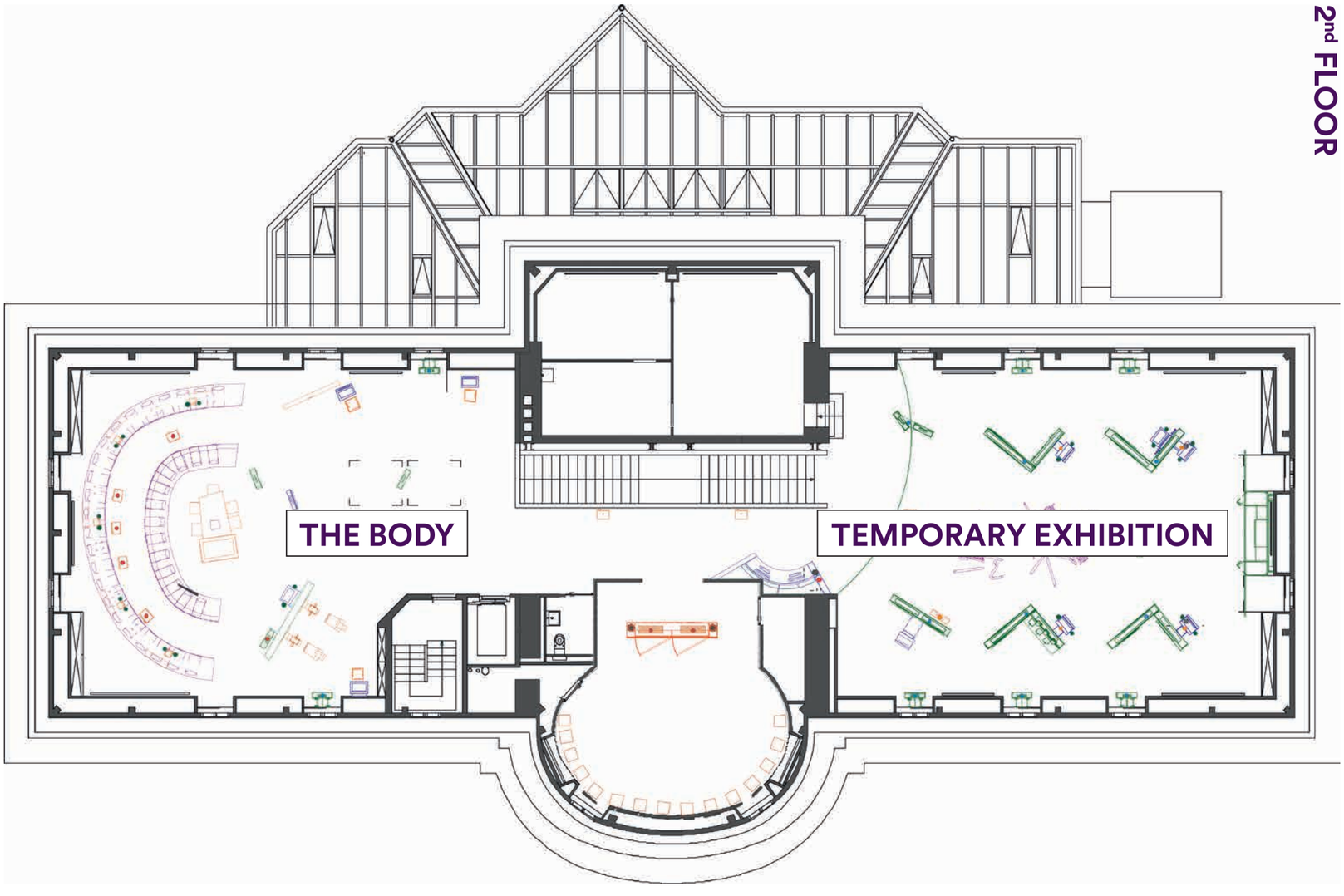
> What are our five senses? What do we use them for?
Our brains use our five senses to invent the world. We create our own image of the world using a stream of sensorial information. This information circulates through our bodies in the form of electrical impulses. When we eat, millions of pieces of information rush into our brains via our sensory organs. At the end of a unique process, our brains form a coherent image.

- **To stimulate further discussion, visit the *Body* sector.**

1st FLOOR



2nd FLOOR



Discovering the exhibition

THE *FOOD* SECTOR

1st floor

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…	a packet of crisps
2. Water buffalo…	a pizza with di buffala mozzarella
3. Durian…	ice cream
4. Pig…	*taillé aux greubons* pastry
5. Sunflower…	bottle of sunflower oil
6. Giant water bug…	a fried snack
7. Tilapia…	fish fingers
8. Wakame…	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 of these six objects is the odd one out? The showcases presenting cultivation and breeding may help you find the answer.

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	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	grapes to raisins
Fermentation	fresh cod to dried and salted cod
Salting	strawberries to jam
Appertisation	fresh fish to smoked fish
Dehydratation	green beans to frozen beans
Refrigeration	milk to cheese

The final part of the *Food* sector looks at packaging. Wrappers not only protect produce, but are a means of providing a range of information about the product (origin, ingredients, nutritional values) and, above all, a way of conveying values and beliefs.

Suggest a great slogan to make people want to buy a Kit Kat!

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 a principal biological need, it has an important social function too.
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.

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

Consumption

Our eating habits 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?

Let's talk about a much-loved drink.

Chocolate was first consumed as a beverage and this is how the upper classes in Europe discovered it. Chocolate in solid form was only made from the latter half of the 19th century onwards, but soon became the preferred cocoa-based product.

Find this object and explain what it was used for!

In the 18th century, chocolate was slowly dissolved in hot water. Sugar, and spices such as vanilla and cinnamon, were then added. The wooden whisk was used to make the chocolate light and frothy.

Put the different stages of chocolate production in the right order:
milling, conching, crushing, moulding, cleaning, grinding, roasting, mixing with sugar, pressing, tasting
cleaning, roasting, crushing, milling, pressing, mixing with sugar, grinding, conching, moulding, tasting

Roasting: The cocoa beans are grilled to release their aroma. Coffee, almonds and hazelnuts can also be roasted.
Crushing: The cocoa beans are broken down to remove their shells.
Milling: The mix of crushed, roasted cocoa beans goes through special mills to produce cocoa paste.

Which of these five objects is the odd one out? Use the display cabinets in front of the large screen of pictures to help you!





The sugar skulls, as they are the only foodstuff! They are eaten during the Day of the Dead festival which takes place in Mexico on 1st November every year. The other objects each represent different places where we eat.

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 (lake side), 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

2nd floor

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 our brains perceive 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 brains use 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.

Shape	Solid
Colour	Smooth
State	Round
Texture	Medium
Size	Red

TASTE

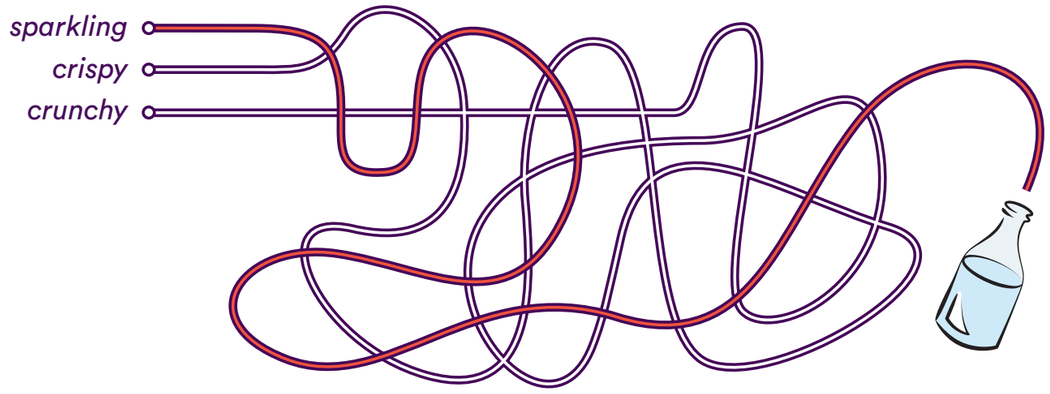
Our tongues help us identify the basic taste of food: sweet, salty, sour, bitter, umami.

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

Our ears provide information on external noises, as well as on noises in our mouths. The sounds made by food are closely linked to its texture. Over a lifetime, our brains store thousands of typical sound patterns, like the sound of an apple as we bite it.



SMELL

Our noses identify odours while our brains learn them, one by one. Thanks to our olfactory neurons, over time our brains could 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.

List a few foodstuffs for each texture...

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

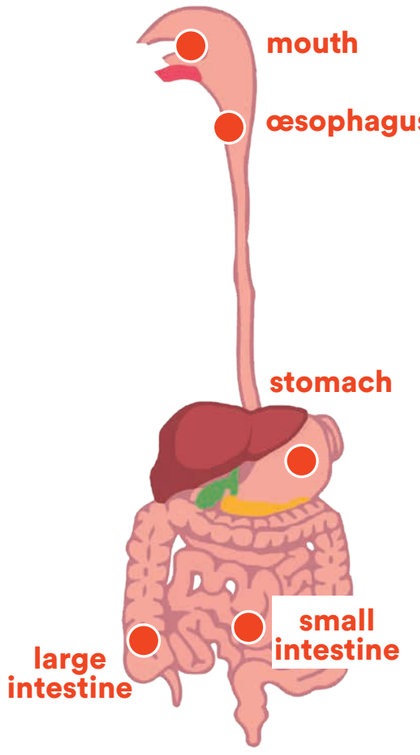
Nutrition and food

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 your mouth and your stools, a mechanical and chemical process reduces the food into molecules that are small enough for your body to be able to absorb them. Approximately 95% of the absorption of nutrients occurs in the small intestine.

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

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

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.

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