

**alimentarium**

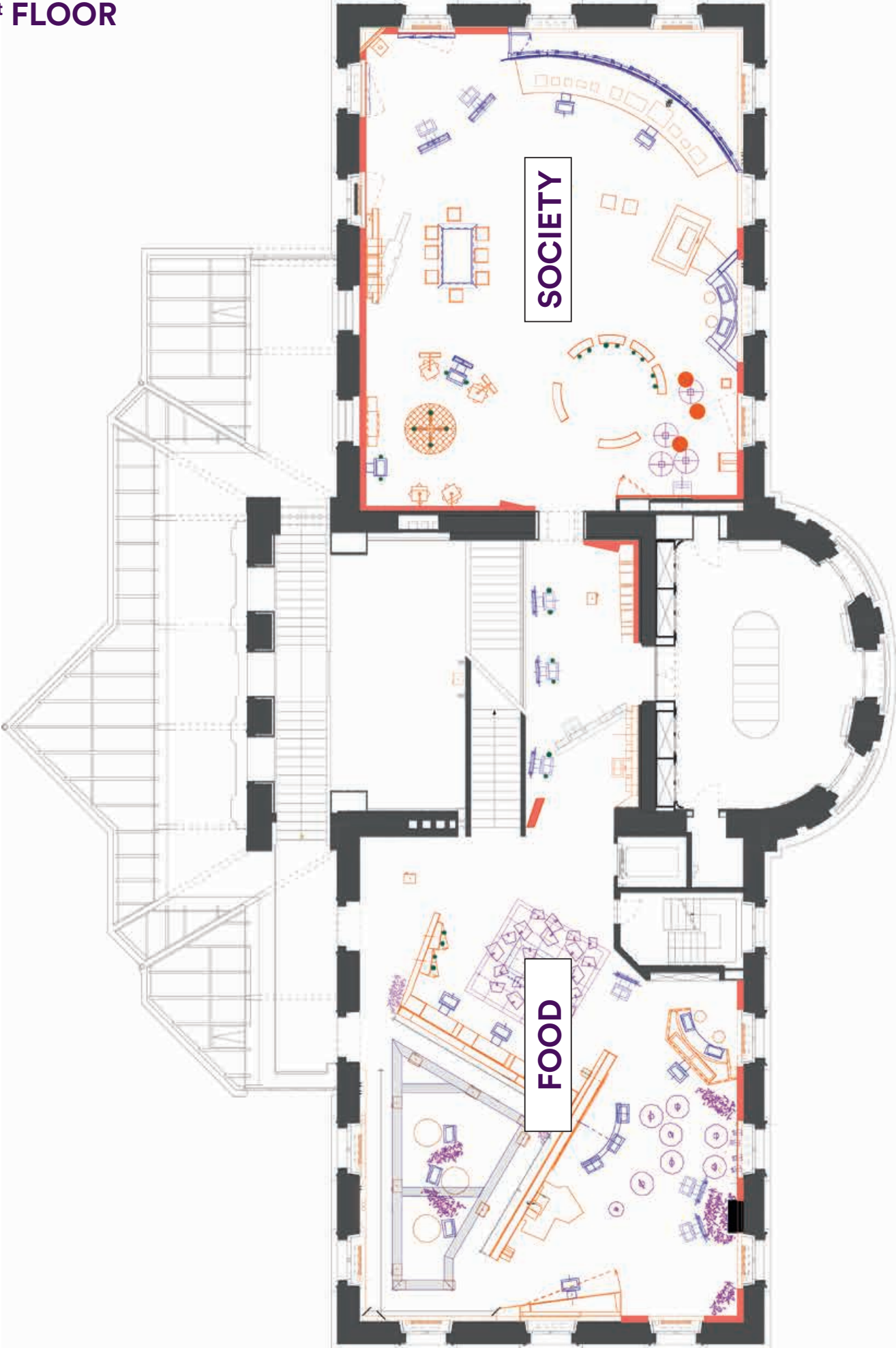
# Food

## The essence of life

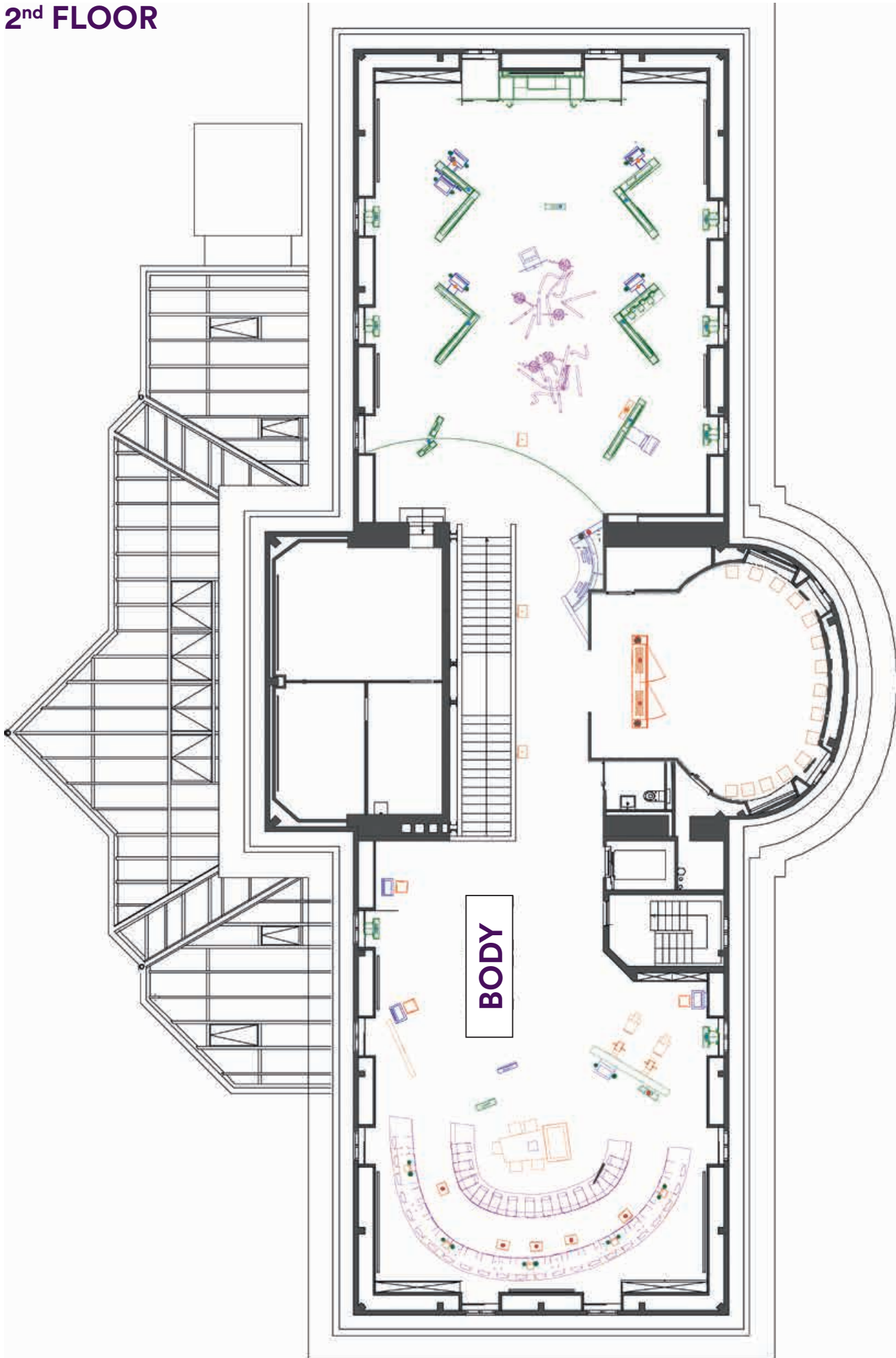
Annual  
theme  
2018 - 2019

Pupils'  
Guide

1st FLOOR



2<sup>nd</sup> FLOOR



# Discovering the exhibition

## THE FOOD SECTOR

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There are three main themes to this sector: Composition / Production / Processing. Before starting your visit, think about the following question: **What do I eat?**

### Composition

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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...

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### Production

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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 led 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.*

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What is this object used for?

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

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.

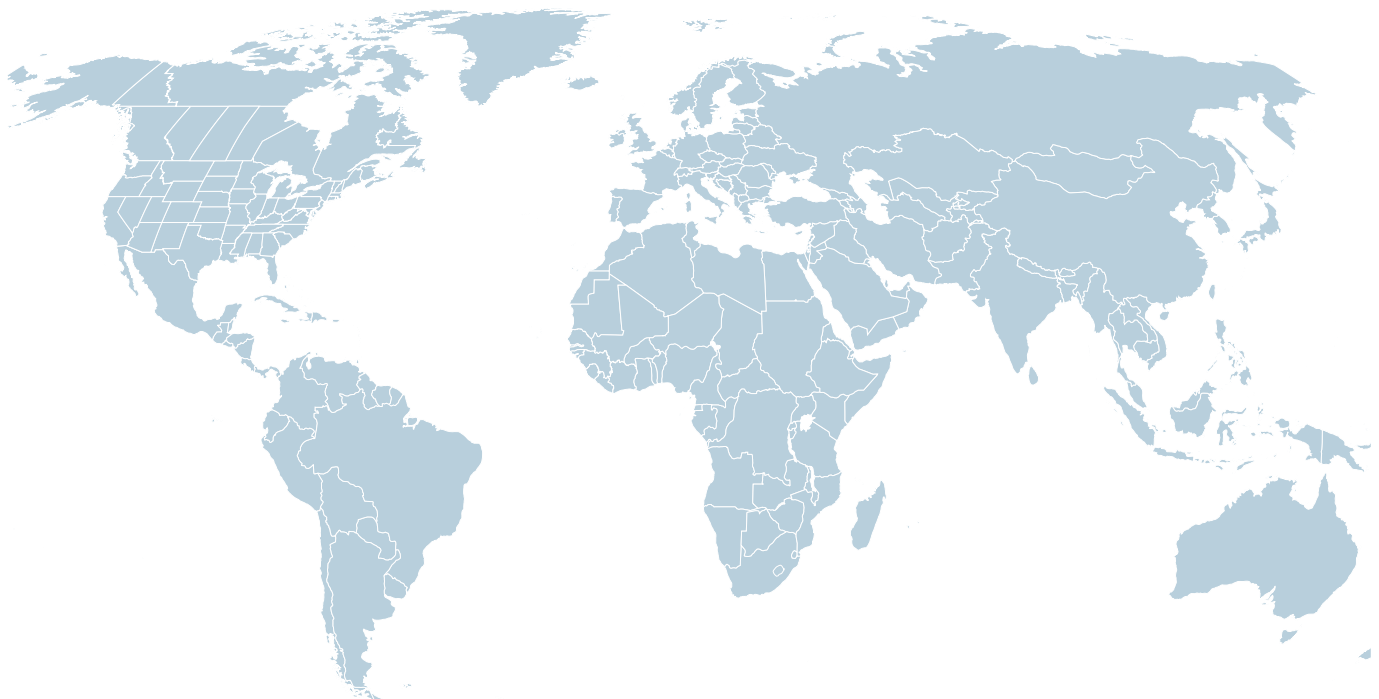
Do you know where these foodstuffs come from? Link the food with its place of origin. The terminals that present food systems may be of help.

- |            |   |   |   |
|------------|---|---|---|
| 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

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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*

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         |
| Dehydration   | ● | ● green beans to frozen beans       |
| Refrigeration | ● | ● milk to cheese                    |



## THE SOCIETY SECTOR

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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.

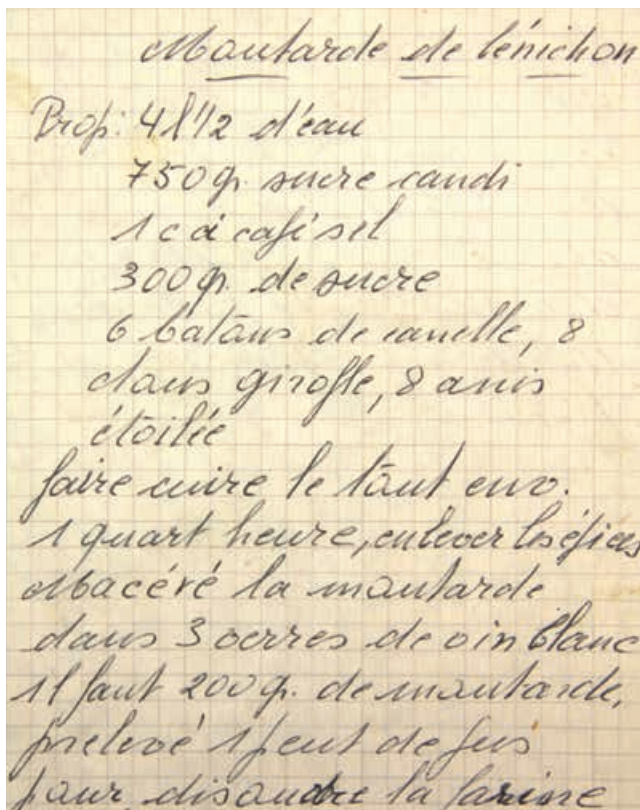
There are three main themes in this sector: Representation / Consumption / Eating habits

### Representation

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By learning the codes of the social group in which we grow up, we assimilate the dietary and culinary rules which govern it. For example, in the West, we 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 us, we forge social ties and a 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.

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## Consumption

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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

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“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?*

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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.*

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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.*

- |         |   |   |        |
|---------|---|---|--------|
| 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: \_\_\_\_\_

Salty: \_\_\_\_\_

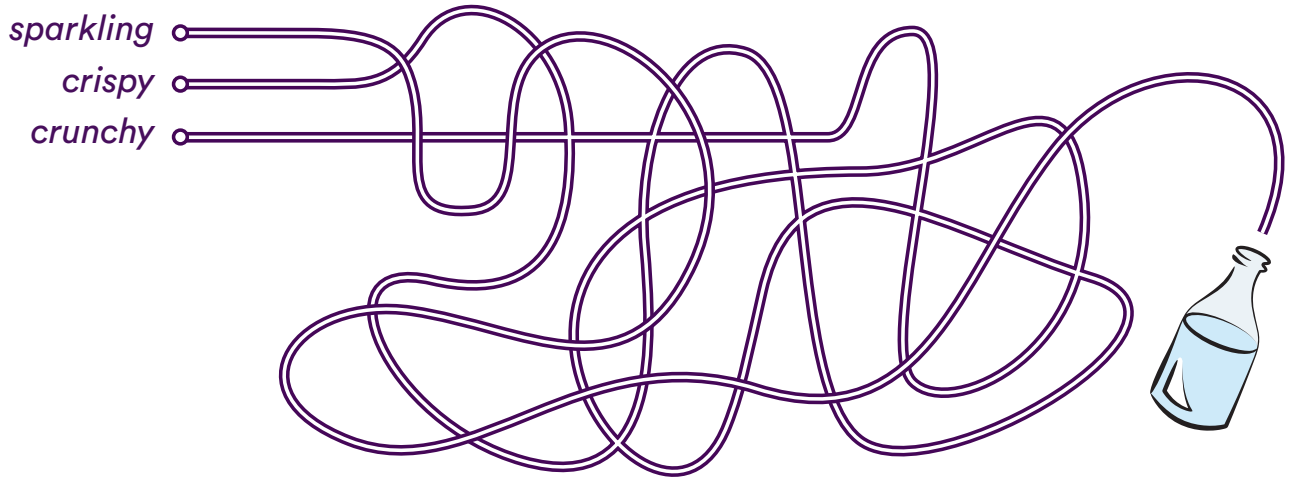
Sour: \_\_\_\_\_

Bitter: \_\_\_\_\_

Umami: \_\_\_\_\_

## 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.*

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## 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: \_\_\_\_\_

Rough: \_\_\_\_\_

Sticky: \_\_\_\_\_

Hard: \_\_\_\_\_

Liquid: \_\_\_\_\_

# Nutrition and food

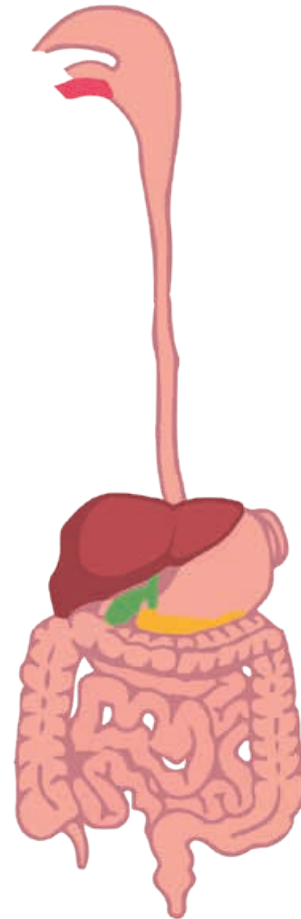
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## DIGESTION

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!*

- small intestine
- mouth
- stomach
- large intestine
- oesophagus



## 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 \_\_\_\_\_ whereas in Benin, it is in the shape of a \_\_\_\_\_. 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.*

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# Annual theme 2018 -2019 :

## *The faces behind food*

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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**

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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.**



Baker

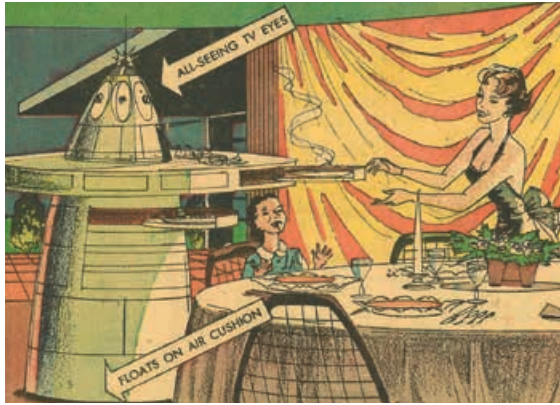
Baker

Cheesemaker

Butcher

Confectioner

**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?**

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

## **The Society Sector**

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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?**

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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?

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According to these two adverts, who does the cooking?

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## The *Body* Sector

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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		

When you are at the *Deciphering sensations* terminal, where you can learn about the day-to-day 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!**

- Blow your nose really hard before smelling the aromas.
- Smell the back of your hand for a few seconds before smelling a different product.
- Chew on a small piece of apple and rinse your mouth with water between two experiments.
- Eat a piece of dark chocolate and rinse your mouth with water before tasting a different product.
- Do the tasting in the dark.
- Put a red light in the tasting room.
- 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.*

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**Environmental issues**

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

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*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?*

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**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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