Handbook for grades 4 – 6

Food for all senses

Sensory Education
based on the SAPERE method



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INTRODUCTION

Sensory training - is to experience with our senses

There is no age limit when it comes to experience with our senses. Happiness is to come home and smell freshly baked bread, whether you are a two year old, a teenager or a pensioner. Imagine feeling a piece of warm bread in your hands, spreading butter on it, adding a slice of cheese, and maybe even a dollop of chutney. The lovely sensation of taking that big bite, feeling the melting butter, the crunch of the crust, and the taste of the chutney, balancing sweet, sour and bitter flavours. This is a mouthful of everyday experiences – ready to be followed by a glass of ice-cold milk or a cup of hot tea.

We all have memories and thoughts about food, a favourite dish that we like more than anything else. And flavours? Some people avoid salty or bitter dishes, some people like everything. Most of us like sweet flavours.

Good eating habits are critical for good health. Primary school has a vitally important role in giving our children this knowledge for the future. School work includes intellectual as well as practical, sensory and aesthetic aspects. Children are learning how to work both independently and as part of a team. School lunches have a fundamental importance for students' wellbeing and performance at school too. School meals should also be seen as an investment and a pedagogical resource which can be an advantage and an important part of their school day.

All this is a part of the SAPERE method. Sapere is a Latin word and means "to be able", "to taste", "to know" and "to feel". The idea is, that in the spirit of the curriculum, where the teacher is the leader who guides the students in their knowledge acquisition, to learn more about our senses and therefore evoke student's curiosity, and give them tools for analytical thinking.

It is easy to put yourself in the situation with freshly baked bread and even imagine taking a bite. But it can be difficult to find the right words to describe how it tastes. And that is the essence of the SAPERE method. ***Without words it is difficult to describe the taste experience. Without taste experience is difficult to find words***.

Tomorrow's consumers

Food plays an incredibly important role in our lives. Food can be a source of pleasure, a way to socialize and something that gives us comfort. Our eating habits are important for our health, both for children and adults, and can even influence the environment around us. By strengthening students' skills and abilities to explore food and food ingredients, we can build healthy attitudes, curiosity and knowledge earlier, creating more aware and empowered future consumers.

The SAPERE method gives students the opportunity to learn about their senses and be proud of it. There are no right or wrong taste experiences. Each experience and opinion is respected. By enriching the vocabulary, bringing attention to your own experience and expressing your own point of view, the SAPERE method is connected to a variety of school learning outcomes. By giving confidence to express their own taste experiences this also results in accepting the different perceptions of others.

History of the SAPERE method

The SAPERE method was developed in the 1970s in France by two students who studied sociology and were interested in the sense of smell. Their research concentrated on how smell evokes memories. The outcome from their studies resulted in flavour classes. French philosopher and chemist Jacques Puisais had a lifetime experience and wide knowledge of food flavours, as he had a background in "oenology" – the study of wine and wine making. Puisais was driven by a strong enthusiasm and a wish to work against a poor and repetitive diet. He was worried that French children were increasingly turning away from varied diets and in particular from bitter, sour and hard foods. They were developing a preference for a less diverse diet focused on soft and sweet foods. The SAPERE method is about how we experience food and flavours with all our senses. Jacques Puisais pointed out that if our sensory experiences are developed by a diet lacking in variety, that can give a negative approach to food choices in the future.

In the mid-1990s, The Foundation for Meal Research in Grytthyttan, contacted Jacques Puisais to developed Sapere International and import the SAPERE method of Sensory Education to Sweden.



Cooperation with teachers

The Swedish National Food Agency, The Foundation for Meal Research and teachers of the Kumla region worked together to adapt the SAPERE method to Swedish schools. The first Handbook of Sensory Education according to the SAPERE method came out in the year 2000. According to studies some children were more open to changes and tasting new combinations of flavours than adults thought. Since then the SAPERE handbook and the SAPERE method has spread and developed, and is used by many schools and kindergartens in Sweden.
Swedish Handbook (*Mat for alla sinnen*) was the inspiration for The Sensory Pantry (*Sinnenas Skafferi -2011*) handbook that is being used by teachers and chefs in Swedish primary schools.

For Finnish children

In the early 2000s, Finland also became very interested in Sensory Education. The SAPERE method had a great start here thanks to extensive health projects in Jyvaskyla and the middle of Finland. It developed and was adapted for younger children from the age of 1 to primary school age, and was also used in after school clubs. The Union of Teachers' Association in Finland trained teachers and developed Food School ABC and now the SAPERE method is popular and well recognised in Finland.

European Network

Sapere International was founded in 1995 – a non-profit organisation where people who work with children, food and flavours can meet in Europe. Sapere International works actively with disseminating knowledge about the SAPERE method and making sure that as many children as possible, in many more countries, can be a part of, and benefit from, flavour and sensory education.

News

The first '*Handbook of Food for All Senses'* came out in the year 2000. Many students, teachers, and schools became a part of the SAPERE method during these years. Various studies show that this method works as it evokes interest, gives joy and expands students' preferences for different flavours.

This Handbook is a new edition, an updated version, where we have used experiences that have developed since the first version came out. It is based on the book *Sensory Pantry (Sinnenas Skafferi)*, the experiences of Finnish and Swedish teachers who are using the SAPERE method with their students. This Handbook is developed for children of Grades 4-6, but works equally well for children of all ages.

To experience with our senses has no age limits and it is best to start as early as possible in a child's development!

Anna-Karin Quetel

Nutritionist

Swedish National Food Agency

Stina Algotson

Chairman

Sapere International





SAPERE – PRESENTATION

SAPERE - a world beyond delicious or disgusting

Should chocolate be room temperature or cold from the fridge? Can lemon sweets be red? Is the apple sweet or tart? Is it floury or juicy? Can food make sounds?

Sapere is a Latin word meaning “to be able”, “to taste”, “to know” and “to feel”. All at once. And that is an excellent definition of what is at the heart of the SAPERE method. To be able to taste, recognise differences and know what is what – and to put words to your sensory experiences. To show that there is a whole world beyond delicious and disgusting.

SAPERE is a joyful, effective and simple way to build knowledge about our five senses: sight, smell, taste, touch and hearing. Often our sensory impressions overlap each other, which is an exciting discovery in itself. The aim of the method is for children to become familiar with their senses and develop the courage and ability to use them independently. Children are also given the opportunity to practise their ability to describe sensory experiences and realise that food does not just taste nice or horrible – it can also be colourful, sharp, fiery, airy or crisp.

A fun way to better health

Food and meals play an important role in our lives. There are many advantages of liking different food ingredients and having a varied diet. Not only are we getting all the nutrition we need but also it opens our senses for new experiences in life.

It is never too early to learn about good eating habits and schools can play a significant role in this.

The SAPERE method can be used as a tool to help children understand more about what they are eating and why. It is a simple method that has no rights or wrongs. It is a fun way of showing children the path to healthy, exciting and good food. It is all about a laboratory-style sensory training, where the learning materials mainly consist of raw ingredients and simple foods, spiced with a lot of curiosity and interest.



Sensory education is the knowledge about what we can experience with our senses – sight, hearing, touch, taste and smell.

The goal of the SAPERE method is to provide children with the ability to:

- Get to know their own senses and their own tastes
- Practice the ability to express their ideas verbally and in writing
- Dare to try new ingredients and dishes
- Increase the variety of what they eat
- Experience food and meals as something exciting and fun
- Connect meaning of the meal to culture, nature, environment and health

	• Develop into conscious consumers

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Sensory education is the knowledge about what we can experience with our senses – sight, hearing, touch, taste and smell.	
NEOPHOBIA It is natural to be hesitant about the food you have never tried before because unknown food could be dangerous. Children are often instinctively more suspicious about new foods. The fear of new food is called *neophobia,* and can affect both adults and children, although it is most common in small children between the ages of 2 and 6 years old. We are born with a preference for sweet and salty foods, while it takes time for us to learn how to like sour and bitter tastes. While many bitter or sour foods are perfectly edible, there are many poisonous plants that taste bitter. So *neophobia* and hesitancy to eat bitter and sour foods protected us from eating poisonous things. Obviously, we don't need to eat all edible foods – taste is an individual thing after all. But we can definitely train our ability to taste and to smell. Besides, our preferences and tastes often change as we get older.	**FLAVOUR TRAINING** Forcing children to try new foods can result in negative associations and unpleasant feelings, which in turn can reduce the chances that the child is going to accept the food in the future. These feelings can stay with us for a long time and sometimes even for the rest of our lives. The best ways to overcome *Neophobia* is by: • **Exposure**: allow children to see and become familiar with new food without being forced to taste it. Just touching or smelling it may be a good start. It can take more than 10 separate exposures before a child accepts a food. • **Positive information**: present unknown dishes in a positive and exciting way, give information about where the raw ingredients came from and how they were cooked. • **Taste bridges**: serve a new ingredient together with a more familiar and accepted dish. The positive feelings associated with the familiar dish become connected to the new ingredient, improving the chances children will accept the unfamiliar food.

A new way of thinking

The SAPERE method is exploratory, reflective and experimental. It gives children the ability to get to know their own tastes and be proud of them. Their experiences are not regarded as right or wrong; instead their personal experiences and opinions are respected. Food is a subject that affects all of us and very little effort is needed to create fun and stimulating conversations that lead to an analytical way of thinking, surprisingly quickly.

The SAPERE method does not judge meals based on how healthy or unhealthy they are. Instead it regards all ingredients as educational tools that the children can explore with all their senses. The SAPERE method is very much about learning to see the meal itself as something inspiring, joyous and meaningful, not as a necessary evil. This applies whether it is eaten at home, at a restaurant or in school. The SAPERE method is more an approach than a traditional subject. The important thing is not the theory about our senses but becoming aware of our own personal experiences. The theoretical aspects of the programme are there to help you to understand what is happening during the training and how that can be implemented when you are teaching the children.

An evaluated method

Several school and pre-school studies have shown that the SAPERE method increases children's interest in food and reduces their fears of new ingredients. Students are dedicated, interested and think that the exercises are fun. Some students might feel that it is strange to describe their own experiences because they are used to look for the "right" answer from a theoretical point of view. A positive and encouraging atmosphere makes it easier for children to describe their own experiences and opinions. This aspect should be emphasised because it is a core aspect of the SAPERE method.

SAPERE is an experience-based method and for that reason, it can be particularly beneficial for children who struggle with theoretical learning.

Examples of how the SAPERE method can be included into the curriculum, Grades 4-6:

ART AND DESIGN: • words and concepts for reading, writing and discussing the design of images and their meaning	PHYSICS • energy flow between objects with different temperatures. How to influence energy flow with the help of, e.g. clothing, thermos, house insulation • how the sound arises, spreads out and is perceived by the ear	CHEMISTRY • the separation of substances and materials based on the properties of appearance, conductivity, solubility or acidity. • The importance of the food and its nutrients for our health. Historical and modern methods to extend food shelf life and sustainability.
BIOLOGY • how the mental and physical health is affected by sleep, diet, exercise and social relations • the human body, name of organs, their appearance, location, function and collaboration • documentation of simple projects with tables, images and simple written reports	HOME ECONOMICS • baking and cooking, different preparation methods • the importance of social eating • different food traditions, e.g. holiday celebrations	SWEDISH • words and concepts used to express feelings, knowledge, opinions and nuances • presentations and storytelling where topics are taken from everyday life and school. Support words, images and digital media as tools for planning and conducting a presentation. How gestures and body language can affect a presentation.
ENGLISH • everyday life, way of life and social relationships in different situations and areas where English is used • opinions, feelings and experiences • language strategies, for understanding and for making yourself understood when you lack words, e.g. Paraphrasing	HISTORY • examples of how ancient times, the Middle Ages, 16th, 17th and 18th centuries can be used today, e.g. traditions, names, language expressions, buildings and cities.	

Connection of SAPERE method to The National Curriculum

The National Curriculum requires that the education should ensure the best interests of the children, take advantage of the children's views and start from democratic values. The curriculum also emphasizes that it is not enough to convey knowledge about fundamental democratic values, but that teaching should be conducted in democratic forms of work. The SAPERE method offers many opportunities to train students in expressing their own opinions while respecting others.

The National curriculum encourage an interdisciplinary approach where the teacher "should organize and carry out the work so that the student is given the opportunity to work across the subject." SAPERE is an interdisciplinary method that spans several different subjects. Cooking, seasoning and the meal experience are examples of topics that relate to home economics, while the chemical and physical properties are linked to chemistry and physics. The function of the senses, taste development and food production are connected to biology, while the ability to express personal opinions can be related to both Swedish and art and design. History, social studies and geography are also included, for example through discussions on sustainable food consumption and exploration of various contemporary food cultures.

In the first chapter of the National curriculum, the school is highlighted as a social and cultural meeting place in an international and mobile society. Fragrances, flavours, music and dance can provide sensual recognition of past experiences. The food is therefore important in a new country and has a multicultural aspect. The value of cultural diversity can be easily illustrated and discussed on the basis of food and meals. The SAPERE method provides opportunities to explore food cultures from different countries, where, for example, students with a foreign background can talk about the country's dishes, flavours, spices and culinary traditions.

Getting started

You can use the entire handbook as it is, or just as a starting point to plan your work according to specific circumstances or ideas. It includes ten chapters, describing our senses, the five basic tastes, planning and cooking a meal, the geography and origin of food, and concluding it with a meal at a restaurant or in the school. Together the lessons form a complete method of sensory training. Each chapter takes about 2-4 lesson hours, depending on how many exercises are included. The exercises in this handbook are adapted for children in Grades 4-6, but most of them can be used for other age groups.

Before you start working with sensory training, it is very important to check if any children have food allergies, or if there are any religious or other food-related restrictions. At the end of this handbook, you will find a suggested letter to parents/guardians to inform the school of known allergies or other restrictions around food.

It is very important to explain to children that all exercises are **voluntary**. Nobody will be forced to taste things they do not want to, it can be enough to smell, to listen, to feel or just look. SAPERE is supposed to be fun and exciting, not something that you are forced to do - there is no pre-requisite to taste.

Your SAPERE team

The SAPERE method works well whether it is implemented by a large team or just by one teacher. Experience shows though that it helps to collaborate with others. A good way to get started is to create a team with all staff members interested in working with the SAPERE method; teachers, Teaching Assistants and school catering staff can all be included. To involve people of different professions is the best way to strengthen teamwork at your school and to take advantage of the diverse skills on offer.

Facilities and group size

Most of the exercises can be completed in a normal classroom, although some of the lessons may require a bit more equipment and might be more appropriate for a school kitchen. Having access to a fridge and cleaning equipment can be helpful.

The ideal group size with one teacher is up to 16 children, but this will probably differ depending on the teachers' experience and age of the children. Some exercises are intended for smaller groups of 4-6 children.

Documentation

There are many ways for children to record their experiences. They can collect words in a word bank or in a dedicated book. Another way of documenting new experiences is letting children take photographs of food and write down their reflections. Children can also be asked to record their experiences of meals at home or their school lunches, as homework.

A Taste Book can be in a variety of formats: from old-fashioned binder to a file on a tablet or a computer. It can even be enough to give your children ready-made photocopies with information, questions and prompts.

Collecting words is an important activity for children because it helps them to build their vocabulary and describe new experiences when they use their senses.

Equipment

Many of the exercises can be done without special equipment, but the following things are useful to have:

- A Taste Book or word bank – each child should have a paper notebook or a digital version of it where the exercises can be documented
- A glass of water during taste exercises
- A couple of see-through cups per child, for about 100 ml (preferably washable/ reusable)
- A couple of teaspoons for each child
- A couple of small plates for each child
- Tape or labels to write on – to label cups, jars and plates
- Paper muffin cases can be a practical alternative to plates (and can be doubled up to provide more stability)
- Cleaning-up materials (sponge, cloth, etc.)

At the end of this handbook you will find a set of worksheets that can be used during teaching.

The finale

An important part of the method is to finish the SAPERE programme with a grand finale, ideally a shared meal or food-related outing. Exactly how "grand" the finale is going to be depends on the materials available. In the French handbook the finale is a visit to a restaurant, where children get a chance to apply their new skills and knowledge to analyse their meal.

Try to arrange your restaurant visit well in advance, and make sure you explain to the restaurant staff what the SAPERE method stands for and what the children learned during the lessons. Usually it is a great experience for everyone involved. If visiting a restaurant is not possible, there are plenty of other options. Simply serving a special meal in the school dining room or even in the classroom with a nice table set up.

In other words, it does not need to be anything extravagant, but we would like to encourage you to make the finale special. After all, the idea is for the children to see the SAPERE experience as fun, different and inspiring – an exciting adventure that is going to be a lasting memory for the future.

From one teacher to another

So happy that you are interested in the SAPERE method that gives students taste experiences beyond the ordinary.

We are two teachers who work with grades 4-6. Under different periods of time we have used the SAPERE method for our students. During the course of the training we have discovered that children both want to and dare to taste many unknown foods, at the same time finding it easier to express their taste experiences in words. They become more comfortable with themselves and dare to stand up for their own opinions. As teachers, we want to say that there is no such thing as a wrong taste experience. The SAPERE lessons are filled with joy and curiosity. It is a positive element in everyday school life and there are many opportunities to integrate this method into several different subjects.

Some practical tips from us:

- *Before you start, send a note home with children to check things like allergies or food restrictions (see our example at the end of this handbook)*
- *Make sure that you, as a teacher, have 20-40 minutes to prepare your SAPERE lesson*
- *Give children a notebook where they can write up and analyse different exercises*
- *Create a resources box to store the equipment for the lessons (so you do not need to look for resources ahead of each lesson)*

We hope that you and your children enjoy the SAPERE method as much as we did!

Annika Kihl and Lena Nord, SAPERE teachers, Karlskoga Municipality, Sweden

CHAPTER 1 – OUR SENSES

Introducing our senses

Our five senses help us to explore our surroundings and protect us from danger. We survive, perceive, learn, enjoy and relax with our senses, often without even realising it. This chapter describes how our senses work and how they affect our food experiences. The focus is on encouraging children to use all their senses, not just one at a time, while also learning about the biological workings of our five senses.

During the lessons you will soon discover that our senses interact with one another, and sometimes even overlap or overpower each other. A meal includes a multitude of different sensory perceptions and sometimes it can be difficult to distinguish between them. The exercises aim to describe different sensory perceptions and interpret what the appearance, smell, consistency or sound of the ingredients or dish tell us.

Children will be given the chance to become more aware of their senses and try different things while learning to express their own thoughts in words. And remember: nobody's thoughts or tastes are wrong**. Everyone has the right to their own experience and their own tastes.**

LESSON MATERIALS (see end of the handbook)

IMAGE 1 – Sensory perceptions

IMAGE 2 – The five senses

IMAGE 3 – Sight: the eye

IMAGE 4 – Hearing: the ear

IMAGE 5 – Smell: the nose

IMAGE 6 – Taste: the tongue

IMAGE 7 – Touch: the skin

IMAGE 8 – Five basic tastes

IMAGE 9 – Smells

IMAGE 10 – Touch

Suggested lesson contents

WHAT IS SAPERE?
Tell the children what the method is and what you will be doing.
Start with an exercise, eg. Exercise 1.1 or 1.2 (see below)

THE BRAIN AS AN ENCYCLOPAEDIA
The brain saves all the information we access. It works just like when we close a book that we have been reading. We remember what we have read and can therefore open the book on the right page and find the part we were reading.

- **IMAGE 1** gives an overview of our senses and helps the children to remember new sensory impressions and sends them to their brain to be stored. Show the image regularly and discuss experiences and exercises based on all the senses. With the help of our memories we can both find our way back to old taste experiences and discover new ones. We recommend giving the children a copy of the image to put in their Taste Book.
- Go through each sense, using **IMAGES 1-10**.
- Let the children suggest and write down descriptive words (adjectives) that can be connected to each sense. Go through each sense in detail, one at a time, during the following lessons.

Examples of descriptive words that are connected to the different senses

SIGHT



State: liquid, compact, carbonated, doughy
Form/shape: round, flat, oblong, wide, thin
Surface/consistency: Shiny, grainy, matte, clear, and murky
Colour: none, dark, light, golden, purple

TOUCH



(in the hand or in the mouth) burning (chilli), cooling (menthol)
Consistency: greasy, stringy, plump, runny, creamy, grainy, smooth, sticky
Temperature: hot, tepid, cold
Taste: sweet, sour, salty, bitter, metallic

SMELL



Autumn, grass, flowers, strawberry, vanilla, liquorice, perfume, countryside, horse, soap, chewing gum

HEARING



Crackling, crisping, gushing, hissing, stomping, squeaky

SIGHT

Sight is the sense that we use the most. Sight is very important for how we perceive tastes as the appearance of food affects our expectations. The eye captures the appearance and state of the food, such as colour, shape, size and lustre.

An apple can, for example, tell us: “I am a fruit with a round shape that has different colours on different sides. The side that has been turned toward the sun is red, while the other side that has been in the shade is green.” A glass of sparkling water can tell us: “I am a drink without colour, I am full of bubbles that tickle your tongue. Do not drink me too quickly or you will feel uncomfortable”

Our sight gives us the opportunity to choose, based on the information from the photoreceptor cells sent via the optic nerve to the visual cortex in the brain. If you like well-done meat and you are served a rare steak, the red colour sends a warning signal to the brain: “This is not for me, the meat is way too red.”
The colour of sweets, ice cream or yoghurt tells us something about the taste. We associate red with tastes of raspberries and strawberries, while yellow and orange with lemons and oranges. Everything is based on our memories of previous experiences and feelings

HEARING

Sound also contributes to how we experience food. The fish sizzling in the frying pan, onions being chopped on a cutting board, pots and pans rattling in the kitchen, the sound of eggs boiling in a pan: all these sounds send signals to the brain via the auditory nerve, and tell us that it is time to eat. Sounds from the kitchen can literally make our mouth water.

Sound also play an important role while we are eating. Crunching crackers or a crisp apple produces a completely different perception to soft bread or juicy peaches. The sound of crispy Danish pastries can bring happy memories, however the sound of someone chewing ice can make you shudder.

SMELL

Smell is something of an underestimated outlier in the world of senses. We normally do not think about how much smell means for our experiences of a meal. Lifting up the plate and placing the food right in front of your nose is a good way to learn about how scents affect the taste.

Humans can smell differences between thousands of scents and we all carry a bouquet of scent memories. The olfactory nerves go directly to the part of our brain that is the centre for our feelings.

Our noses also tell us about the quality of the food: if it is fresh or rotten, ripe or unripe. In other words, it is a built-in warning system to avoid us eating food that may make us sick.

When meat lands on the BBQ or meatballs are being cooked in the oven, tempting scents tell us that something wonderful is about to happen. The scent makes us pay attention, in anticipation. The taste buds prepare themselves, our mouths water and we begin to imagine the food that we are going to eat.

We can learn to choose smells and scents and associate them with the environment where we first experienced them. The scent of spices, ripe fruit, summer rain, countryside, foreign countries, etc. All smells can be given their own identity.

To improve our ability to recognise smells, it is important to be able to put them into words. It helps to sort the smells in our memory and retrieve them when we need them. The language of scents is mainly shaped through comparisons, called analogies. As an example, we say that “it smells like a banana,” or that “it smells like

a pencil". If a smell is completely new and unknown to us, we normally do not understand it and have no words for it, apart from "it smells good" or "it smells bad".

We perceive *smells* through the nose while a*romas* reach our nose through the mouth. When we have a cold or a congested nose, we cannot distinguish smells or aromas. Food does not taste of anything and life becomes boring.

TASTE

The sense of taste is in our mouth, mainly on our tongue, but also in our gums and throat. It is based on our five basic tastes: sweet, salt, sour, bitter, and the fifth basic taste, umami (which is reminiscent of broth). There may also be receptors in our mouth that can perceive fat and metallic tastes.

All taste buds can recognise all five basic tastes. In the past people believed that different parts of the tongue picked up different tastes, but now we know it is not quite that simple. We may however be more or less sensitive to certain tastes in different parts of the mouth.

The number of taste buds differs from person to person, but is usually between 5,000 and 10,000. This also makes us more or less sensitive to the basic tastes. Most of us like the sweet taste from birth, perhaps because breastmilk is sweet. Others prefer sour tastes. This means that what you like cannot be "wrong".

When we talk about taste in general, we normally mean a combination of taste, scent and other sensory perceptions.

TOUCH

We normally use touch to check the temperature and consistency of food, but can also include sensations such as the burning heat of chillies or the tickling of fizzy drinks. In many cases these are reactions that adults have become used to and learnt to like, but which can be a source of actual physical discomfort for children.

Perception from touch can originate in the mouth or on the lips, but also from our hands. Just by touching a slice of bread we can make a first assessment of its structure and consistency. The consistency of an ingredient or dish is much more important than we think. Many people dislike jelly-like dishes, while crispiness may make some dishes seem tastier. Texture also plays an important part. Tough and rubbery meat can be difficult to eat, while minced meat is much easier. If you swallow food without chewing, you will lose the whole taste experience.

Temperature can also govern our experience of different dishes. The same soup can be served smoking hot or ice cold. Our sensory perceptions become completely different depending on the food's temperature. The consistency is also affected by the temperature. The soup is probably more viscous when it is cold than when it is straight from the pot.



DISCUSS:

- Can our sight be wrong and mislead us? Can something that looks boring on the surface still taste delicious – or the other way around?
- How can meals be affected by noise in the kitchen? Discuss which noises might disturb or stimulate appetites.
- How does food taste when you have a cold?
- The sounds that one person may like can make another person shiver. Discuss what it depends on.

THINK BIG

Let the children describe how they feel about food and meals, for example by making a mind map. Ask them to cut out images and words from magazines and brochures and glue them onto big posters that can be used for discussions about food. The images can be examples of what they like or do not like, dishes that are served at home or at school, dishes that are associated with certain holidays or memories. The images can be the starting point for exciting discussions about the role food plays in our lives, how our tastes differ and where our preferences come from.

At the end of the SAPERE training, it is a good idea to make a new mind map and compare it to the first one. The maps can then be exhibited in the classroom or the school dining area.

EXERCISES

1.1 The importance of our senses for our taste experiences

PURPOSE:
To understand how our senses collaborate during the taste experience.

MATERIALS AND INGREDIENTS:
- Raw potatoes
- Firm pears
- Carrots
- Toothpicks
- Potato peeler
- Cutting board and a knife
- Three large bowls
- Kitchen towels
- Blindfolds

DURATION:
30 minutes + writing up

STEPS:
- The teacher prepares potatoes, pears and carrots. These are peeled and cut into equally sized pieces. With a toothpick in each piece, they are placed in bowls that are covered and kept secret.
- All children have their own blindfold. When the exercise starts all children have to pinch their nose closed. They get one sample at a time, taste it and guess what it is. They then let go of their nose and if they want to, they can get another piece of the same sample. Now the blindfold is taken off and the eyes may be used.
- Discuss: What did the children think they had in their mouths during the first taste test? Let them write this down in their Taste Books. What did they think when they had help from their sense of smell? And finally, what did they think it was when they were allowed to use sight?
- Group discussion: Discuss what senses the exercise was about – the feeling in the mouth, taste, smell and finally sight. Did they use their hearing at all? Then discuss the collective importance of all our senses for our perception of tastes - can our senses mislead us?
- Remember that nobody has to taste something if they do not want to.

1.2 Guess the taste

PURPOSE:
To understand the impact of sight in the taste experience.

MATERIALS AND INGREDIENTS:
- Apple juice, approximately 200 ml for each child (preferably freshly squeezed with pulp)
- Three jugs
- Food colouring, two types – e.g. red, orange, green, yellow or purple
- Transparent glasses/cups, three per child
- Glasses with drinking water

DURATION:
Approximately 30 minutes + writing up.

PREPARATION:
Pour the apple juice into three jugs. Colour two of them with a little bit of food colouring and leave one it's natural colour. Pour all three versions of the apple juices

into the glasses so that each child has three glasses in front of them.

STEPS:

- Give each child a glass each of the differently coloured juices.
- Let the children first reflect on the appearance, then the smell, and finally (for those who want to) the taste of the drinks.
- Write down the words the children use on the board. And let them write it down in their Taste Book too.
- Let the children guess the ingredients of the drinks.
- Then reveal that it is the same drink, and hold a discussion about how sight impacts our other perceptions.
- Discuss and make notes in their Taste Books.

1.3 Is there a difference between apples and apples?

PURPOSE:
Pay attention to different senses, finding words to describe experiences and have confidence in their opinion.

MATERIALS AND INGREDIENTS:

- 3-4 different types of apples, divided into 4-6 pieces each, so that there are enough apple pieces for everyone
- **IMAGE 1**, as support for the analysis

STEPS:

- Put the pieces of apple separately on the table where everyone can see them.
  Let the children choose a piece each and explain why they have chosen that piece
- Ask them to smell their piece of apple and describe it's scent. Then let them smell another type and compare the scent. Do all apples smell the same?
- Let them taste the different types of apple and describe the tastes in words. At this point it is also good to connect the experience to other senses. How did the apple feel? Was it juicy or floury? Smooth or rough? Cold or room temperature? How did it sound when you bit into it? Help them find the words. It may be a good idea to show *Image 1* as support.
- Did the scent and taste correspond to expectations?
- Write down their observations, words and opinions in their Taste Books.
- The aim of the exercise is not to determine which apple tastes the best, but if such a discussion does take place, it is important to remind the children that no bodies view is more right than anyone else's. Everyone has the right to their own taste.

Connecting to school lunches

Let the children discuss and document some dishes that are normally served in the kitchen based on their sensory perceptions. What does the dish look like? How does it taste? How does it sound when you chew it? Is it hot or cold? How does it smell?

Then do the same thing toward the end of the SAPERE programme, and let the children decide for themselves if anything has changed on the journey. Has their vocabulary grown? Is it easier to analyse sensory perceptions?

It is a good idea to let the children create an exhibition about SAPERE in the school dining area, so that children from other classes can also find out more about it. Who knows, it might become a real talking point and awaken interest all over the school.

CHAPTER 2 – OUR BASIC TASTES

Our basic tastes

In this chapter children are going to learn about our basic tastes and see how differently they are perceived. The purpose of this is to show what tastes exist and that we all experience them in a different way. In several of the exercises it will become clear that we have different personal preferences.

LESSON MATERIALS:

IMAGE 1 – Sensory perceptions

IMAGE 6 – Taste: the tongue

IMAGE 8 – Five basic tastes

WORKSHEET 1 – The basic tastes

WORK SHEET 2 – Comparative tasting

Suggested Lesson Contents

The review of how basic tastes work

- Talk about *Image 6* (*Taste: the tongue*) and how the sense of taste works physically. Present the five basic tastes. Discuss what role they have.
  Use *Image 1* for support.
- Explain what the taste buds are made of and how they work.
- Go through *Exercise 2.1*, where the children do a blind test of different basic tastes. It is usually a fun exercise to start with and a good way to engage the children and encourage an interesting discussion.

FACTS

Taste

Taste is one of our two chemical senses (the other one is the sense of smell). The taste sense is located in the mouth, mainly on the tongue, but also on our gums and in our throat. The sense of taste is made up of a number of different papillae types. The papillae consist of taste buds which in turn contain taste receptor cells. Each taste receptor cell has a lifetime of approximately ten days and new ones are constantly being created. The sense of taste reacts to substances that are dissolved in liquid, i.e. in our saliva.

Our taste buds register **five different basic tastes: sweet, salt, sour, bitter and umami**. All the taste buds on the tongue can register all five basic tastes to a varying degree. In the past people believed that we felt different tastes on

different parts of the tongue, but now we know that it is not quite that simple. We may however be more or less sensitive to different tastes in different parts of our mouth.

There may also be receptor cells that can perceive the taste of metal, fat and water, but there is no scientific proof of this so far. Then there is kokumi, a sort of taste experience that is believed to occur when calcium channels on the tongue are activated by peptides (protein parts). For example, a mature cheese produces a more complex and filling mouth sensation compared to a cheese less matured. Kokumi is thought to have a taste-enhancing effect but is not a taste in itself.

The number of taste buds differs from person to person but is usually between 5,000 and 10,000. That is why we have different reactions when it comes to basic tastes. Certain people have more taste buds and often experience basic tastes more strongly than others. Most of us like sweet tastes from birth, possibly because breastmilk is sweet. The preference for sweet things is probably linked to our genes. It is possible that a preference for sweet things originally gave us an evolutionary advantage by tempting our ancestors to eat healthy fruits and berries.

One of the functions of taste is to stop us from eating dangerous things. The fact that we produce a lot of saliva when we eat something sour is the body's way of reducing the sourness to a healthier level.

The fact that many people naturally find it difficult to like bitter tastes is a way of protecting us from eating poisonous substances, as these often have a bitter taste. This, however, does not mean that all poisons taste bitter and that everything bitter is poisonous!

When we talk about taste, such as saying that something tastes good, we normally mean a combination of sense of taste, smell and touch.

DIFFERENT TYPES OF PAPILLAE

Fungiform – shaped like fungi. Taste buds are only present at the top of the papilla, approximately 30 per papilla. These can be found all over the tongue, mostly at the tip and sides of the tongue.

Foliate – shaped like leaves. Have approximately 100 taste buds per papilla. Located all over the tongue but mostly at the very back of the tongue.

Circumvallate – vallate papillae. Are extremely sensitive to bitter tastes, approximately 30 taste buds per papilla. Can be found at the back of the tongue and in the throat. V-formed.

Filiform – shaped like threads. Completely lacking taste buds and probably have no impact on our perception of tastes. However, they probably are important for how we experience consistency.

Fire and Ice

Certain food substances can cause a burning feeling in the mouth. For example, capsaicin from chilli and piperine from black pepper. This special feeling is not a "real" taste, as it is not registered by the taste buds. Instead nerve fibres on the tongue are activated that can sense pain and temperature.

The spicy feeling from chilli, black pepper and other hot spices such as ginger and horseradish plays an important part in many food cultures, e.g. Ethiopia, India, Peru and Thailand.

Other substances can cause temperature-sensitive receptors to react to cold, despite the fact that they are not exposed to low temperatures. This fresh or icy feeling can for example be caused by mint and menthol.

Sugar and Fat

People have natural preference for sweet things. There is not a single culture in the world that does not like sweet things. When we say that sugar is melting in our mouth it means that it is being dissolved in our saliva. There are different types of sugar. Raw sugar consists of fructose and glucose. The amount of sugar in food indicates how energy rich the food is.

The food ingredient we usually refer to as sugar comes from sugar cane or sugar beet; but there are many other sugars that give foods a sweet taste.

Sweeteners such as aspartame are not composed in the same chemical way as sugar carbohydrates, but the taste receptors on the tongue still register them as several hundred times sweeter than normal sugar. The body does not see them as a source of energy and they do not contain any calories, but many sweeteners have other bad characteristics. They cannot be heated up too much and many have a bitter, unpleasant aftertaste.

We also have a natural predilection for fat. It is an excellent source of energy and our ancestors benefited greatly from their desire for fat when food was scarce. Fat is not a basic taste, but scientists still think that we may have taste receptor cells that can sense it. One thing is clear – fat has an impact on how we perceive taste, as many aroma substances are soluble in fat. Different types of fat dissolve at different temperatures – oil is liquid at room temperature, while solid fats in the form of butter and cocoa butter melt in the mouth. The consistency of fat also impacts the tactile perception inside our mouths and the consistency of the food.

What is Umami?

Umami is usually called the fifth basic taste. It is a Japanese word and has a meaning “leaking” or “rich”. The taste was identified as early as 1908 by the Japanese taste scientist and professor Kikunae Ikeda (1864-1936). He found a common taste in asparagus, tomatoes, cheese and meat that could not be connected to any of the four previously known basic tastes. He managed to isolate the taste and concluded that from a chemical viewpoint it was composed of the salt form monosodium glutamate (which has become a common flavouring in Asian food). In 2000, a team of scientists at Miami University discovered that there are special receptors on the tongue that can perceive the taste of umami and since then umami is considered as the fifth basic taste. Umami can most accurately be described as a sweet/salty broth flavour and is on its own an efficient enhancer of other tastes. Examples of foods that contain a lot of umami include parmesan cheese, Parma ham, mushrooms, meat, soya, tomatoes and shellfish.



EXERCISES

2.1 Recognising the basic tastes

PURPOSE:

To learn to recognise the five basic tastes.

MATERIALS:

The exercise can be performed with colourless liquids or with more common ingredients that produce coloured liquids.

Sweet:

- 3 teaspoons of sugar/1 litre of water

Salty:

- ½ teaspoon of salt/1 litre of water

Sour:

- ¼ teaspoon citric acid/1 litre of water

Bitter:

- Grapefruit juice, weak coffee, black tea or cocoa in water (with no sugar)

Umami:

- ½ teaspoon of monosodium glutamate dissolved in 1 litre of water (can be found in Asian food ingredient shops)
- Alternatively, meat stock (granules, cubes or bouillon) or Natural Umami (powder).

- Litre jug and measuring cups
- Jugs and spoons
- Masking tape and pen
- Glasses (five per child)

DURATION:

Approximately 40 minutes + writing up

STEPS:

- Prepare solutions with the basic tastes according to the recipes above and pour into numbered glasses or mugs in advance, approximately 10 ml in each.
- Repeat the names of the basic tastes and write them on the board.
- All children taste solution number 1 at the same time and discuss which basic taste it could be. Help them on the way by asking what food the taste reminds them of. Finally, reveal the correct answer.
- Repeat for all five tastes. Do not reveal the answer for the penultimate glass until the end, so that the last taste also becomes exciting and not something they can figure out in advance.
- The children can note down their guesses and the correct answers in their Taste Book.
- Finally, compare the different tastes without looking at the numbers and try to remember them. Then discuss why we use so much sugar and salt in our food.

2.2 When sour meets sweet

PURPOSE:

To experience and understand how tastes affect each other.

MATERIAL AND INGREDIENTS:

- ½ -1 lemon per child
- 2 teaspoons of granulated sugar or icing sugar per child
- Teaspoon for measuring
- Glasses or mugs - one per child
- Glass, mug or other container for the sugar - one per child
- Knife and cutting board

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- Ask the children to squeeze the lemons and distribute the juice into the glasses.
- Distribute one glass of lemon juice and one container with a bit of sugar to each child.
- The children get to taste the lemon juice and then add as many teaspoons of sugar as they think necessary to balance the acid. Ask them to try half a teaspoon at a time and then taste.
- Encourage discussion and comparison of their own preferences.
- Let the children fill in *Worksheet 2*, *'Comparative tasting, questions about lemon juice and sugar'.*

2.3 Why do we put salt in bread?

PURPOSE:

To investigate how big a difference it makes when a taste that we are used to is missing.

MATERIAL AND INGREDIENTS:

- Unsalted bread, one piece per child
- Salted bread, one piece per child

DURATION:

Approximately 20-25 minutes + 5 minutes for writing up (+ any potential baking if preparing bread yourself)

STEPS:

- Distribute one piece of unsalted and one piece of salted bread to each child.
- Ask the children to taste the unsalted bread first and then the salted bread. Ask them to fill in *Worksheet 2*, *'Comparative tasting, questions about bread 1 and bread 2'.*
- Discuss the tasting with the children and ask them to make notes in their Taste Books.
- This exercise is a good opportunity to collaborate with the kitchen staff or family. The children can also be given the task of baking bread at home as homework, depending on their age and experience.

RECIPE FOR UNSALTED WHITE BREAD:

50ml oil
500ml water
50g yeast
2 teaspoons granulated sugar
Approx. 1300g wheat flour

RECIPE FOR SALTED WHITE BREAD:

Follow the recipe above but add 1 teaspoon of salt at the same time as the sugar.

INSTRUCTIONS

- Heat the water to 37°C. Mix in the oil.
- Dissolve the yeast in the water/oil mix and add the sugar (and salt if using)
- Pour ¾ of the flour in a bowl and add the mixture.
- Knead the dough until it is shiny and smooth and easily comes away from the bowl.
- Spread a bit of the flour over the dough and place a towel over the bowl. Let the dough rise in a draught-free area for approximately 30 minutes until it has doubled in size.
- Form the dough into two loaves. Place on an oven tray covered with baking paper or in greased bread tins (approx. 1.5 litres). Let the dough rise for another 30 minutes.
- Bake at 225°C for approximately 30 minutes or until the loaves have developed a nice crust and sound hollow when you knock on the base of them.
- Let the bread cool down under a clean kitchen towel.

NB If you have your own recipe for bread you are welcome to use this but remember to make one batch with and one without salt. It is a good idea to avoid adding other spices to the bread as this makes it more difficult to taste the difference between salted and unsalted.

Finding the basic tastes

Help the children associate different ingredients with the different basic tastes. Some suggestions and examples of raw ingredients:

Sweet – sugar, honey, banana, cake, meat, carrot

Sour – lemon, vinegar, rhubarb

Salty – salt, shrimp, pickled gherkins

Bitter – endives, coffee, artichoke, rocket salad, cocoa or dark chocolate

Umami – soya, mushroom, sundried tomato, parmesan cheese

Connecting to school lunches

Ask the children to analyse today's (or yesterday's) school lunch based on the basic tastes. Which basic tastes were included in the dishes served? Let them make notes in their Taste Book and discuss freely.

If possible, invite the kitchen staff to join the lesson. Maybe they can tell the children about how they have worked to find a balance between the different basic tastes?

CHAPTER 3 –TASTE COLLABORATION

How the tastes interact

The learning outcome of this lesson is for the children to discover how the different tastes affect each other. This can, in turn, be a starting point for thinking about how to find a good balance of flavours when you choose ingredients and also learning to create a whole meal.

The children can try out foods and drinks in different combinations to learn to recognise the importance of connections for the entire experience.

LESSON MATERIALS:

IMAGE 1 – Sensory perceptions

IMAGE 8 – Five basic tastes

Suggested Lesson contents

For this chapter, we will use different raw ingredients to discover the basic tastes and learn how they interact with each other. The children get to taste different types of ingredients and try to find the basic tastes for these, as well as working on expressing their sensory perceptions in words.

This is a good time to emphasise and demonstrate that not everyone experience tastes in the same way. It is also more difficult to find the basic tastes when they overlap with each other.

The children learn that a tasty dish consists of a combination of many basic tastes, that taste better together than on their own. This is a lesson where one plus one equals three!

FACTS

This is how the basic tastes affect each other

The food we eat often contains a mix of several different basic tastes. The tastes have an impact on each other, which can make it more difficult to identify them.

Sour and sweet are examples of tastes that overlap. Sour foods with sugar are still chemically sour. But the sour taste is affected by the sweetness and the dish is experienced as less sour. Carbonic acid in soft drinks reduces the sweetness, making a flat soft drink taste sweeter than the one that has just been opened. Saltiness reduces bitterness, which can be proved by putting a pinch of salt on a bitter endive leaf. Bitter medicine for children is often heavily sweetened to reduce the negative experience.

The basic tastes and flavours can be in balance which means that you can taste all flavours without any of them

dominating. If there is a balance in combination of flavours most people would like it. New taste experiences are created when you have a synergy of flavours.

By consciously striving to balance flavours and ingredients, delicious taste combinations can be created. Chefs are trained to find a good balance between the basic tastes. This is also something we do at home when we add a bit of umami taste from parmesan cheese, a bit of bitterness from rocket salad, sweetness from berries or the sourness from lemon juice, to a salad.

When you prepare a meal, it is important to keep in mind that different ingredients also have different consistencies. A dish where different consistencies are included on the plate tastes better than a dish where all the food on the plate has the same consistency. Imagine crispy fried fish with soft mashed potatoes and al dente vegetables.

Examples of how tastes affect each other:

- Sourness reduces sweetness
- Sweetness reduces bitterness
- Sourness enhances saltiness
- Umami enhances all other tastes



EXERCISES

3.1 The vanilla test

PURPOSE:

To discover how basic tastes overlap each other and sometimes mask each other.

MATERIAL AND INGREDIENTS:

- Vanilla yoghurt
- Custard (preferably with the same amount of sugar as the vanilla yoghurt, or a bit less)
- Natural unsweetened yoghurt
- Spoons
- Labelling equipment
- Glasses or transparent mugs (three per child)

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- Pour the vanilla yoghurt, custard and natural yoghurt into the mugs and number them 1-3.
- The children get to taste and compare. They should assess which is the sweetest and note this in their Taste Books. Then reveal how much sugar each product contains. Ask them to calculate how many teaspoons of sugar have been added (1 teaspoon of sugar weighs about 4g). Discuss why we often add so much sugar to food and drinks.
- Many are going to be surprised when they discover that even if the custard seemed to be much sweeter, the vanilla yoghurt contains at least as much sugar. This is because the sourness of the yoghurt masks the sweetness.
- Interesting questions: What happens when we mix tastes? How are they affected by each other?

3.2 A sandwich of basic tastes

PURPOSE:

The children get acquainted with raw products and their different flavours and experiment freely to see how taste changes when different basic tastes are mixed. Encourage creative combinations. You cannot do anything wrong in this exercise, only make fun discoveries.

MATERIAL AND INGREDIENTS:

- Bread (for example whole wheat bread) - four small slices per child
- Different spreads and ingredients with basic tastes, for example:
- Honey (sweet)
- Apple or melon (sour, sweet)
- Orange (sweet, sour)
- Balsamic vinegar (sour, sweet)
- Cottage cheese (sour, salty)
- Ham and cheese (umami, salt)
- Tomatoes (sour, sweet, umami)
- Sea salt (salty)
- Caviar (salt, sweet)
- Olives (salty)
- Pickled gherkins (salty)
- Rocket salad (bitter)
- Endive salad (bitter)
- Other ingredients, such as butter, pepper (from a pepper mill) and sunflower seeds
- Knives and cutting boards

DURATION:

Approximately 40-60 minutes + writing up.

STEPS:

- The teacher places the bread and the other ingredients on the table. Next to each plate the teacher places notes stating the most obvious basic tastes of the ingredient.

- The teacher and the children, together, go through the most unusual ingredients and the children get acquainted with them.
- The children make little sandwiches by combining different ingredients in the most creative way. The purpose is to create sandwiches where all five basic tastes are included. Each child gets to make several different sandwiches. Which ingredients produce the most delicious sandwich?

If the sandwich does not taste good, the child does not have to eat it. The importance of this exercise is to be brave and creative and try different flavour combinations. It is a practical way to show that food usually tastes better when all basic tastes are included and can work together, for example:

- Balsamic vinegar
- Honey
- Rocket leaves
- Ham
- Cheese
- Apple slices
- Pepper

The exercise can also be performed with more simple ingredients. For example, you can try cheese or ham in combination with sweet fruits; ginger biscuits with cream cheese or blue cheese; dried dates with blue cheese.

3.3 What happens if you add a flavour?

Buy ready-mixed chocolate sauce. Let each child taste a little. Then ask the children to add a little bit of sea salt and try again. Discuss and make notes. Talk about what happens if you add a taste. In this case the flavour becomes more pronounced with salt than without. A similar exercise can be performed with tomatoes or tomato sauce and a pinch of sugar. In this case the flavour also becomes more pronounced.

3.4 Chocolate tasting

Use different types of chocolate as a starting point, eg milk chocolate, dark chocolate with approximately 60% cocoa and chocolate with 70-85% cocoa. Give the children a piece of each and ask them to analyse how the taste changes when the cocoa percentage or sugar content increases. Make notes in their Taste Books.

3.5 Bitter, more bitter, the most bitter

Let the children compare pieces of different types of citrus fruits and then rank them in order of bitterness (or sourness), eg satsumas, oranges and grapefruit. Taste, discuss and document. The exercise can also be performed with different types of fruit, in which case, the children rank the fruits depending on how sweet they find them.

Is all fruit equally sweet?

Fruit is naturally tart, but also contains quite a bit of sugar in the form of fructose. The sweetness increases as the fruit ripens, as starch is broken down into sugars. It can be difficult to judge how sweet a fruit actually is as the tartness masks the sweetness. Some fruits contain more sugar than others at a comparable stage of ripeness.

Average sugar content in fruit per 100 grams:

- Pineapple 11.2 g
- Banana 13.5 g
- Apple 9.6 g
- Grape 15.1 g
- Orange 8.9 g
- Grapefruit 6.5 g
- Lemon 0.2 g



Connecting to school lunches

- Investigate if you can connect the experiment to a school lunch. Preferably, speak to the kitchen staff well ahead of time. Perhaps the children can try to add different tastes to the lunch of the day. What happens if you squeeze a bit of lemon onto the salad or add sugar to the tomato sauce? What does the bread taste like without salt?
- Maybe you can get access to ingredients from the school kitchen that can be tasted and mixed freely in the classroom.
- Parts of the lunch could be prepared without salt. If the kitchen bakes its own bread the children can compare salted bread with unsalted bread.
- A buffet can be created in the school dining area, containing ingredients with characteristic basic tastes as per Chapter 2. Encourage the children to experiment with how the individual tastes are experienced on their own and in combination. All combinations are allowed!
- This is also a good opportunity to collaborate with family, as children could then get access to a real kitchen and produce dishes based on the concept of basic tastes.
- Perhaps the dish of the day could be a surprise, just announced as "The Taste Test"! Give the teachers the job of preparing the children to use all their senses and to make notes of how they experience the lunch of the day. What does it look, smell, sound, taste and feel like? During the lesson following the lunch break, the children can all tell the class about their description. The children can also be asked to guess the ingredients, spices and

CHAPTER 4 – SMELL

Smell

The children will learn how the sense of smell works. The learning outcome is for them to learn to trust their own noses, both as an analytical tool and to enhance their own experiences.

They are also given the opportunity to build up vocabulary and learn how to describe and remember scents and smells.

LESSON MATERIALS:

IMAGE 1 – Sensory perceptions

IMAGE 5 – Smell: the nose

IMAGE 9 – Smells

WORKSHEET 3 – Home and other smells

WORKSHEET 4 – Spice and plant smells

WORKSHEET 5 – Flower and fruit smells

WORKSHEET 6 – Oils

WORKSHEET 7 – Honey

Suggested Lesson Contents

Smell is a somewhat underestimated outlier in the world of senses. We simply do not think a lot about how important it is for the experience of a meal. In this exercise, the children get a practical chance to discover how important the sense of smell is for how we experience food. The children could make a mind map on the basis of their own scent memories. Show *Image 1* and go through the importance of smell for our sensory perceptions.

Go through the sense of smell and how the nose functions - *Images 5 and 9*.

Discuss how smells affect us in different ways. And what happens to the sense of smell when we get a cold?

Perform a practical exercise, see *Exercise 4.1* below, with hidden smells. As an example, use closed and numbered jars or mugs and let the children open the lid a little bit or make little holes in the foil. Let the children guess and write their suggestions down before the ingredients are revealed. Working in pairs can make this easier. The lesson can also be arranged as a game, such as a smell memory game.

For these exercises you can choose between different types of smells. One exercise can consist of known smells from the home or school environment, such as erasers, toothpaste, pencils, washing powder, leather etc.

The next exercise may be more kitchen related and contain smells such as familiar spices and ingredients, e.g. cinnamon, coffee, cocoa, oregano, cloves, mint, cardamom, vanilla, liquorice, basil etc.

Another exercise can be for the children to practise recognising smells from flowers and fruits. Some examples: violet, orange, rose, cherry, lavender, apple, banana, lemon, elderflower, lilacs, peach, plums, pineapple, lilies and raspberry.

FACTS

Our sense of smell – How it works

The sense of smell is our second chemical sense and, just like our sight, a remote sense. This means that we can interpret the information at a distance, unlike our senses of taste or touch, for which we need to be in contact with the product. Our sense of smell registers fleeting substances in gas form that are soluble in fat or water.

At the back of our nasal cavity is the olfactory mucosa, the olfactory epithelium, a surface that is approximately 5 cm^2. This area contains millions of cilia. On these are myriads of tiny receptor molecules that register the smell substances dissolved in the nasal cavity mucosa. The olfactory receptors have a short life and are replaced every one to two months.

The sense of smell is not as important for modern humans as it once was. We simply do not use it as much as our ancestors did. This could be because we now walk upright and the nose is considerably further from the ground. It could also be because the functionality of our sense of smell, over time, has been replaced by alternative functions.

Sniffing like a dog

When we assess smells from a sensory perspective, it is preferable to breathe in using short breaths, and to sniff with our

noses, much like a dog does. This creates turbulence in the air stream through the nose, so that more air passes through, which makes it easier to perceive smells. When we breathe in normally, only 2-5% of the air we breathe in passes the olfactory epithelium, but if you sniff, the level can increase to 10-20%.

Strong smells evoke strong feelings

The nerves related to our sense of smell go directly to the part of cerebrum called the olfactory cortex. The olfactory cortex is included in the limbic system, which is the centre of our feelings. This is why smells so easily evoke strong memories from previous experiences and events.

We remember the smell of the summer house, the forest, the sea… The smell might even differ from ocean to ocean. We can smell the different smells of various trees, such as pine, fir and silver birch. The smell of our basement or attic can evoke feelings, as can the smell of different seasons or the smell of the underground or a bus. The nose allows us to travel in time, sometimes to good and sometimes to bad memories. The smell of good food can make us feel happy, increase our appetite and anticipation when we are hungry, while the same smell can almost make us feel ill when we are full. The smell of freshly baked bread often increases our appetite and is sometimes used on purpose by shop owners who bake bread in their shops.

The language of smells

Humans can tell the difference between thousands of different smells, but can sometimes struggle to describe them in words. In order for the brain to remember the smells, we need to put words to them and have a memory bank of other smells to compare them to, called analogies. We can practise our ability to recognise and remember smells to become better at it. For example, you can help your brain by thinking “This biscuit reminds me of oranges”.

When we taste food or a drink, the smell enters the nose through the back, i.e. through the mouth. This is called *retro nasal olfaction*, which means that the smell is transformed to *aroma* and is no longer termed as a smell. The difference is that aromas are released from foods when they are heated up or cooled down by the mouth and the saliva. When we start chewing, the food breaks down and new aromas are released and can spread to the olfactory cortex. Approximately 80-90% of what we call taste is actually aroma components that are picked up by our sense of smell.

Smells and aromas can be divided into basic groups. Natural smells come from places and rooms, animal smells are from the animal kingdom, vegetable smells are from the plant kingdom (flowers, fruits and so on).

Artificial smells are manufactured, such as the perfumes that are included in many types of products such as shampoo and washing powder.

People who are losing, or have lost their sense of smell and cannot perceive any aromas at all, suffer from a condition called anosmia.



TIPS:

- The smell tests are best if you use natural substances. For example, place a cinnamon stick or ground cinnamon in a jar and cover with cotton wool so the children cannot see what it is.
- Use small plastic jars with lids that can be squeezed a bit, e.g. small plastic containers for soap.
- Preferably divide the smell tests into several different lessons. You can have a “smell of the day” for the duration of the SAPERE lessons.
- You could connect a lesson on bees and beekeeping to the honey tasting.



EXERCISES

4.1 Blind smell test

PURPOSE:

To improve the sense of smell and learn to analyse different smells with the help of the brain's memory bank.

MATERIAL AND INGREDIENTS:

- Smell samples from the kitchen, such as cinnamon, ginger, nutmeg, chilli, coffee, mint, cardamom, lemon, vanilla, horseradish
- Smell samples from home and school environments, such as eraser, pencil, toothpaste, washing powder, shoe polish, leather
- Smell samples from the plant kingdom, such as fresh herbs or flowers
- Small non-transparent jars, mugs or bottles
- Maybe some aluminium foil or cotton wool to hide the look of the ingredients
- *WORKSHEETS 3, 4 and 5*

DURATION:

Approximately 20-60 minutes + writing up, depending on the number of smells to be tested and the number of children who are to analyse and tell the rest of the class about their experience.

STEPS:

- Place a smell sample in every jar/mug. If needed, hide the substance with a wad of cotton wool or aluminium foil that you poke holes into.
- The children are allowed to smell and then guess what is in the container. They then get to write down their guesses in their Taste Book or on *Worksheets 3, 4 and 5* before the contents are revealed.
- Discuss and analyse.

4.2 What does a carrot smell like?

PURPOSE:

To discover how the smell of the same ingredient can vary depending on the circumstances.

MATERIAL AND INGREDIENTS:

- Bits of raw and cooked carrots, two pieces per child.

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Let a couple of children boil a few carrots until they are soft.
- Serve them together with pieces of raw carrot.
- Ask the children to describe the taste, the smell, the aroma, and the consistency of the carrots after they have tasted them. Note their experiences in their Taste Book.

4.3 Orange or orange

PURPOSE:

To discover how the smell of the same ingredient can vary depending on the circumstances.

MATERIAL AND INGREDIENTS:

- Oranges, a quarter fruit per child
- Orange marmalade, approx. 1 teaspoon per child
- Plenty of teaspoons
- Orange peel

DURATION:

Approximately 20-30 minutes + writing up.

STEPS:

- Let some children peel the oranges and hand out the segments, some marmalade on a teaspoon and pieces of orange peel to all the children.
- Ask them to smell and compare before they taste the orange segments and the marmalade.
- Let them make notes in their Taste Books and discuss the test.

4.4 Test with water

PURPOSE:

Improve the sense of smell and analyse an ingredient that we assume has no smell.

MATERIAL AND INGREDIENTS:

- Fizzy water
- Tap water
- Glass or transparent mug, two per child

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Pour fizzy water into half of the glasses and normal tap water into the rest of the glasses.
- Distribute a glass of each to each child.
- Ask the children to smell and taste both types of water. Let them make notes in their Taste Books and discuss the test.

4.5 Recognising oils

PURPOSE:

To discover the difference between different types of cooking oils, also at an olfactory level.

MATERIAL AND INGREDIENTS:

- Rapeseed oil
- Peanut oil or sesame oil (NB Ensure nobody is allergic to nuts)
- Olive oil
- Other types of cooking oils
- Small glasses or transparent mugs
- Marking pen or masking tape
- *Worksheet 6* for writing up

DURATION:

Approximately 20-30 minutes + writing up.

STEPS:

- This exercise is preferably performed in pairs.
- Pour a little bit of each oil into numbered jars.
- Distribute the jars to the children and ask them to smell the different types of oils and fill in *Worksheet 6 – oils*.
- Make notes in their Taste Books or on *Worksheet 6* and discuss the test.

4.6 Honey tasting

PURPOSE:
To be able to determine the difference between different types of honey by just using the sense of smell.

MATERIAL AND INGREDIENTS:

- Different types of honey
- Teaspoons
- *Worksheet 7*

DURATION:

Approximately 20-30 minutes + writing up.

STEPS:

- Give the children two different types of honey on separate teaspoons.
- Ask them to smell each honey before they taste it. The result is noted in their Taste Book or on *Worksheet 7 – honey.*

TIP: The exercise can also be connected to a lesson about bees and pollination.

Connecting to school lunches

- Check if it is possible to serve spices or spice mixes with the school lunch in connection with the lessons on smell. The herb or spice of the day could be placed in the dining area, e.g. fresh herbs such as basil, dill and oregano, or dried spices such as cinnamon, cardamom and ginger, or spice mixes such as curry, garam masala or taco spices.
- The children can also be given the task of describing smells and aromas from the dishes served in the kitchen.
- Let the children guess the secret ingredient in the school lunch, or perhaps the whole recipe. What is really in the food? This requires thorough food detecting. The exercise can also be arranged as a competition.

CHAPTER 5 - SIGHT

Sight

The purpose of this lesson is to give the children an idea about what our sense of sight is made up of and how it works. This includes making them more aware of how important sight is for how they perceive and assess everything around them.

It is not always the prettiest dish that tastes the best. Food that looks ugly or boring does not necessarily taste bad or boring. The children are given the chance to describe and analyse what it really is that their sense of sight registers.

LESSON MATERIALS:

IMAGE 1 – Sensory perceptions

IMAGE 3 – Sight: the eye

IMAGES 11 and 12 – Different structures, 1 and 2

Either a selection of fresh fruits, flowers and vegetables or images of different fruits, flowers and vegetables.

Suggested Lesson Contents

Explain that sight is the sense that the majority of us use the most.

Talk about the eye and the sense of sight with the support of *Images 1 and 3*. The exercise can also be performed as a group project where the children are allowed to search for the information themselves and then present it to their classmates.

Discuss how we describe visual impressions with words. For example:

- Consistency – can be everything from liquid to compact and everything in between. Bubbly, doughy, runny….
- Shape – round, oval, flat, oblong, big, small, thick, wide, thin etc.
- Surface – shiny, grainy, matt/dull, see-through, murky, floury, etc.
- Colour – transparent, dark, light, golden, yellow, blue, red and all other colours imaginable…

FACTS

We eat with our eyes

Human sight is among the best developed sights in nature. Our sense of sight is the sense we use more than any other. It picks up at least 80% of our perceptions. And 70% of all receptor cells in the body are in the eyes. No other sense provides as much information about our surroundings. The more shapes and colours we are offered, the more we normally select. This is true, for example, when selecting pick and mix sweets or in front of a buffet. This is also true when children select from the school salad bar. Perhaps it is not so odd that we are said to eat with our eyes!

All the colours of the rainbow

What the eye actually perceives is light – electromagnetic fields with different wavelengths that have different colours. They are registered at the very back of the eye – on the retina where the photoreceptor cells are placed. These are in turn divided into rods and cones.

The cones register the colours red, blue and green, either on their own or in combination, and small details. They also are the quickest at adapting to the dark. After approximately five minutes the cones achieve their maximum light sensitivity. At that point the rods take over. They are extremely sensitive to light but need 20-30 minutes to adapt to darkness.

The older we get, the longer it takes the eye to adapt to different light conditions.

The eye can fool us

When we look around us we prepare for what is coming. We select, assess and sort. Old feelings come back to life and we remember what we like and what we do not like. Our sight is, in other words, a kind of sorting mechanism, a “sensory barrier”.

But our eyes can make mistakes. This is when we need to rely on our other senses. The milk may look ice cold and fresh, but do we dare drink it without smelling it first?

The eye does not like to be disappointed. It does not matter how many colourants sweets have been brightened up with if they do not taste good. The more impressed we are by looking at something, the more we expect in terms of taste. A bright green, very shiny apple that does not taste or smell good, or of anything at all, can leave us disappointed and even fooled.



Different types of sight perceptions

- *State*

There are many states between liquid and solid. Cream is a good example. The eye can tell the difference between a clear broth and a creamy, thickened soup. The eye registers the state of the food and prepares us for how it will feel in our mouth. Food in gas form, such as fizzy drinks or foam, provides another form of experience and creates different expectations.

- *Shape*

Shape speaks a clear language. A wrinkled raisin tells us how it will taste, especially in comparison to a round and smooth grape. A clementine does not have the same shape as an orange. Wheat does not have the same shape as corn. And so on…

- *Surface and consistency*

What does the surface look like? Is it shiny or matt? Rough or smooth? Is it fuzzy like a peach or shiny like a nectarine?

- *Colour*

Colour plays an important role when it comes to food and impressions. Some colours are associated with certain

tastes, others we experience as boring and some are more tempting than others. If we polish an apple, we experience the colour as being more intense, even if the taste remains the same.

Green food ingredients are normally from the plant kingdom. White is associated with dairy products. Blue is not a common colour in the world of food.

When you describe a colour there are many nuances to choose between. From light to dark to shades such as yellowish green and bluish green but also shades that can be associated with other ingredients, such as lemon yellow, pea green, chocolate brown… Let the children come up with more examples.

When things are not what they seem

How a dish is presented is very important for the whole experience. If the dish is presented nicely and looks delicious we are more tempted to taste it.

Other more negative visual impressions also affect us and give us signals about what is to come. Murky water does not feel OK to drink. Salad that looks wilted or brown is thrown away. We are hardly likely to bite into a very brown banana.

Our previous experiences have taught us that these are foods that have gone bad. The eye tells us when we need to watch out. But on the other hand our eyes can also make mistakes. Something that looks unappetising and colourless may very well be delicious.

We need to pay attention and be critical – and open to new experiences.

Can a room have a taste?

As part of a research project the same meal (chicken stew and rice) was served in different environments. Despite the same exact meal being served, the taste was experienced as different in each of the environments. The meal was experienced as being most delicious when served in a restaurant, worse in a retirement home and school dining room and even worse at a hospital. Many varied factors impact our meal experiences, not just the actual food on the plate. Sound, lighting, scents, colours, presentation, company and temperature are all examples of factors that have an impact on how we experience the meal.

At school you can test this by serving the normal school lunch in a restaurant environment for a smaller group of children, and evaluating their meal experiences in comparison with a group that eats the same meal where it is normally served.

EXERCISES

5.1 Which plate would you choose?

PURPOSE:

To become aware of how the appearance of the meal impacts our experiences.

MATERIAL AND INGREDIENTS:

- *Images 11 and 12*

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- First show *Images 11A* and *B*, then *12A* and *B*.
- Let the children discuss and note down their observations based on questions such as: Which plate looks most appealing - why? Which plate sends out signals about a party, an everyday meal, glamour, luxury or budget? How important are the colour, shape and environment for the experience of the meal?
- Discuss what you can do to make the dish look tastier. The assessment can also be performed as a vote. Which meal wins?
- A similar exercise can be to let the children decorate something edible, such as a sandwich, or present the school lunch in an appetising or unappealing way – or maybe both.

5.2 Fruit plates

PURPOSE:

To discover how colour and shape awaken our appetites, curiosity and enjoyment of food.

MATERIAL AND INGREDIENTS:

- 4-5 large and preferably pretty platters or trays
- Cutting board, knife, potentially a peeler
- Common and uncommon fruits and vegetables, such as: cucumber; red and green tomatoes; red, green and yellow peppers; red, green and yellow apples; green and yellow pears; kiwi; orange; tangerine; different types of melons; mango; papaya; pineapple; banana etc. Choose based on the season if you can.

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- Create fruit and vegetable platters with cut pieces of common and uncommon fruits and vegetables. Choose based on the season and the availability, but there should be at least 10-12 different things. The fruit and vegetables should be cut up in advance and placed beautifully on large platters.
- The first task for the children is to choose three fruits. Ask them to note down in their Taste Book what they have chosen and why. After tasting them, let them write down their impressions. Then allow them to make a new choice of fruits and vegetables. The group discussion after the taste test provides the opportunity to share new experiences with one another.

HOW MANY DO YOU KNOW?

Distribute fruits, flowers, vegetables and grains – or images of them. Let the children note down the names of all the ones they recognise.



5.3 Water test

PURPOSE:

To investigate how all components of a meal affect visual impressions.

MATERIAL AND INGREDIENTS:

- Water
- A pretty jug, carafe or similar
- A worn, boring or ugly jug, plastic bottle or similar
- Two transparent glasses or mugs per child

DURATION:

Approximately 15 minutes + writing up.

STEPS:

- Serve the children water from the two different jugs. Ask them to choose which water they would like to taste. Let them analyse and make notes in their Taste Books about why they made the choices they did and what the water tasted like. Was there really a difference in the taste?
- Discuss how glasses, plates, cutlery and so on affect our experience of the meal. Is there a difference between eating the same meal with plastic cutlery on a paper plate and eating it with silver cutlery from a porcelain plate?

5.4 Yoghurt test

PURPOSE:

To discover how visual impressions create expectations of how food will taste.

MATERIAL AND INGREDIENTS:

- Natural yoghurt
- Three jugs
- Red, green and yellow food colouring
- Glasses or transparent mugs (four per child)
- Teaspoons

DURATION:

Approximately 20-30 minutes + writing up.

STEPS:

- Pour the yoghurt into three jugs. Keep the rest in the original tub.
- Mix a little bit of food colouring into each of the jugs. Then pour a little bit into each glass or mug, and one with uncoloured yoghurt.
- Distribute the glasses to the children and let them guess the taste by only using their eyes.
- Ask them to make notes in their Taste Books before allowing them to taste. How well did the taste compare to their expectations?
- An alternative is to allow the children to mix the food colouring and yoghurt themselves. They can for example be tasked with preparing a mix that looks nice and delicious, and one that looks ugly and unappealing. Did they taste different? Which tasted best?

Connecting to school lunches

- Give the children the task of paying extra attention to what the food looks like the next time they eat in the school dining room - colour, state, shape etc. Then let them compare their taste impressions with the visual impression. Did the appearance correspond to their expectations? Were they tempted to taste the food or not? Why? Let them note down their observations in their Taste Books.
- Do a test where the children are asked to place the school lunch in different ways on different plates and discuss the visual impression as per *exercise 5.1*. The plates can also be photographed and discussed in the classroom.



CHAPTER 6 – TOUCH

Touch

The purpose of the lesson is for the children to learn about what our sense of touch is made up of and how it works. They get to discover and become aware of how important touch is for how we experience food and ingredients, something you may not think of initially.

The same orange can taste completely different depending on how we cut it. An ice cold tomato tastes different compared to one heated by the sun.

LESSON MATERIAL:

IMAGE 1 – Sensory perceptions

IMAGE 7 – Touch: the skin

IMAGE 10 – Touch

Suggested Lesson Contents

A good introduction to the lesson can be to discuss the children's breakfast habits. Which tastes better: yoghurt with or without pieces of fruit - why? How do they like their cereal - crunchy and crispy and eaten as soon as the milk is poured? Or do they prefer soft cereal that is softened up in the milk for a while? Should the egg be soft or hard boiled, fried or scrambled? Let the children explain their choices by talking about consistency, temperature and tactile impressions.

What is touch? Let the children talk freely around the word touch. Most of us rarely think about how important touch is for the entirety of our experiences. It is just "there".

- Use *IMAGE 1* – Sensory perceptions to make the children more aware of how our taste experiences are affected by touch.
- Look at *IMAGES 7* and *10* – Touch, and explain what our sense of touch is made up of. An alternative is for the children to look for information and facts about the sense of touch themselves and then present it to the class.
- Use *IMAGE 10* – Touch, as a starting point to discuss how we can transform our tactile impressions into words. Food can for example feel runny, rough, fat, creamy, lean, sticky, grainy, thin, smooth or gritty. Ask the children to give more examples and perhaps connect them to a specific dish or a specific ingredient.

FACTS

Feeling your way forward

Consistency is far more important for our taste experiences than we think. Many of us dislike jelly-like ingredients, such as raw egg whites, oysters or the fatty bits on meat.

Even if we hardly ever think about it, the sense of touch is our largest sensory organ, with a combined surface area of approximately 1.5-2 square metres in an adult. The sense of touch is mainly found in the skin but muscles, tendons and joints also play a role. The dermal layers contain tactile organs and receptors that react to heat, cold, touch, pressure, vibrations and pain. These in turn send signals through the sensory nerves to the brain.



Three different parts

Our sense of touch can be divided into three different parts:

- **Tactile** – registers sensory perceptions in the skin, such as fingers and lips. Examples: smooth, rough, hard, soft.
- **Kinetic** – registers sensory perceptions in muscles, tendons and joints, as in when we chew. Examples: tough, tender, crispy, hard, soft.
- **Trigeminal** – registers sensory perceptions in our nose, mouth and throat, such as pressure, structure, cold, heat and strong flavours such as chilli. Examples: cold, warm, flat, smooth, hot, rough.

Not too much, not too little

Our sense of touch is a compound sense that can assess many things at the same time, everything from a light touch to intense pain. As we put something in our mouths, its temperature affects both our tactile impression of it and the consistency of the food.

A left-over cold chicken wing that has been left in the fridge overnight does not feel anything like it does when it is served fresh from the oven. Meat is also experienced as being considerably tougher when it is cold.

A glass of cold water feels much more refreshing than a glass of tepid water. However, if it is too cold it can almost hurt our throat when we drink it, in the same way that very spicy food can produce a burning, stinging feeling in our mouths.

Cold, colder, coldest

Hot and cold are connected to our sense of touch. This is not just true for our mouth and throat; temperature also affects the tactile impression we get from something that we eat. If the ice cream has been left in the sun for a while it feels completely different from when it is served straight from the freezer. It is not just the taste that changes. The ice cream becomes runny, soft and creamy if exposed to heat. Ice cream frozen rock solid however feels hard and compact.

Do we feel things differently?

Is the feel of food reacted to in the same way in every culture? This is an excellent opportunity to talk about food from other countries. As an example, in the Chinese cuisine, jelly-like and spongy dishes are highly appreciated.

How much of our experience depends on what we are used to at home? Talk about daring to try dishes from other countries. Discuss how Swedish food has changed over time. What was the equivalent of taco fifty years ago?



EXERCISES

6.1 Touch exercise

PURPOSE:

To use our sense of touch and practise expressing the experience in words.

MATERIAL AND INGREDIENTS:

- Objects with different textures. Choose based on availability and characteristics. Some examples include: rocks, a piece of metal, pillow, soft toy, cloth bag with rice or wheat, brush, glue stick
- Post-it notes
- Pen

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Place the objects on a table.
- Write the following words on the post-it notes: hard, rough, cold, soft, smooth, grainy, silky, sticky, and slimy.
- Hand out the post-it notes.
- Ask the children to touch the objects with their hands and then place the post-it notes in front of the objects they associate with that word.
- Discuss the exercise and make observations in their Taste Books.

6.2 Testing hot and cold

PURPOSE:

To understand, discover and investigate how temperatures affect tactile perception.

MATERIAL AND INGREDIENTS:

- Cold water
- Tepid water, about 34°C
- Hot water, about 44°C
- Thermos with boiling water
- Three bowls or mugs
- Thermometer

DURATION:

Approximately 15 minutes + writing up.

STEPS:

- Pour water of different temperatures into three bowls. A good idea is to use boiled hot water from the thermos and mixing it with cold until a safe hot temperature is achieved.
- Ask the children to walk up individually and feel the temperature of the water in the different bowls with their fingers. Five seconds for each bowl.
- Let the children make notes in their Taste Books and describe how they experienced the water.

6.3 Tasting water

PURPOSE:

To investigate how tactile impressions can have an impact on taste.

MATERIAL AND INGREDIENTS:

- Cold water, about 8°C
- Tepid water, about 34°C
- Hot water, about 44°C
- Thermos with boiling water
- Three glasses or mugs per child
- Thermometer

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Pour water of different temperatures into the children's three cups. Use boiled hot water from the thermos and mix it with cold until a safe hot temperature is achieved.
- Ask the children to taste the water. Let them discuss the connection between tactile impressions and taste impressions and make notes in their Taste Book.

6.4 Ice cream and sorbet

PURPOSE:

To investigate how consistency affects taste experiences.

MATERIAL AND INGREDIENTS:

- Ice cream or similar
- Sorbet
- Spoons
- Mugs or small plates

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Distribute a little bit of ice cream and sorbet to each child.
- Ask them to taste both kinds and compare the tactile perceptions and taste experience.
- Make notes in their Taste Books.

6.5 Tasting eggs

PURPOSE:

To investigate how consistency affects the taste experience.

MATERIAL AND INGREDIENTS:

- Boiled eggs
- Small plates
- Spoons or forks
- Knife and cutting board
- Raw eggs
- Bowl or glass

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- If possible, let some children boil the eggs (hard boiled); otherwise, boil them in advance. Peel them, cut them into slices and place the eggs on small plates.
- Hand out to the children and let them taste the eggs.
- You can even cook the eggs for different periods of time to compare and describe the consistency.
- Crack open some raw eggs, separate them and pour the egg whites into a bowl or glass. Let the children feel the egg white with their fingers.
- Make sure the children wash their hands after this exercise
- Discuss and make notes in their Taste Books.

6.6 Fresh vs tinned fruit

PURPOSE:

To become aware of tactile impressions from fruit with different consistencies and how these affect our experience.

MATERIAL AND INGREDIENTS:

- Pears or peaches from a tin
- Fresh pears or fresh peaches
- Knife and a cutting board
- Toothpicks
- Small plates or napkins

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Drain the canned fruit. Preferably peel the fresh fruit so that it is similar to the canned fruit. Cut up equal size pieces of the canned and the fresh fruit and place tooth picks in them. Place them on plates or napkins and hand them out to the children.
- First let them describe the feeling when they touch the fresh fruit and the canned fruit – or the other way around. Then ask them to write down the words that describe how the different types feel in their mouths.
- Discuss what they liked the most and why. Make notes in their Taste Books.

6.7 Cold and hot tomato soup

PURPOSE:

To investigate how temperature affects the taste experience.

MATERIAL AND INGREDIENTS:

- Thermometer
- Cold soup
- Warm soup
- Thermos
- Glasses or mugs, two per child

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Pour hot and cold soup into two glasses or mugs for each child.
- Ask them to smell the soup before they taste it.
- Discuss the smell.
- Let them taste. Discuss the taste and make notes in their Taste Books.

6.8 Touch detectives

PURPOSE:

To describe tactile impressions in words.

MATERIAL AND INGREDIENTS:

- Cloth bags with elastic, or socks
- Ingredients with different textures, for example, some of the following: radishes, sweet potatoes, strawberries, tomatoes, chillis, onion, oats, pieces of cheese, marzipan, rice, potato flour, bay leaves

PREPARATION:

Place a different ingredient in each bag, number the bags and note down what is in which bag.

DURATION:

Approximately 20-25 minutes + writing up.

STEPS:

- Let each child put his or her hand into the bag and describe the contents with as many touch words as possible. Write the words on the board or let the children make notes in their Taste Books. The other children get to guess what the contents are.
- Discuss what it is like to identify an ingredient using just one sense.

Connecting to school lunches

- Let the children discuss the school lunch of the day based on their tactile impressions. What was the food like? Hard, smooth, cold, hot, sticky or a combination of different consistencies on the plate? Make notes in their Taste Books.

CHAPTER 7 – HEARING

Hearing

We rarely think about how our hearing impacts our food experience. But consider the clattering of pots from the kitchen, the crunching of biscuits, the butter sizzling in the frying pan, the popcorn popping in the microwave, the soup bubbling in the pot, the water running from the tap, the sound of the knife against the cutting board…

The sounds from the kitchen prepare us for the food that we are going to eat. The food also makes noises in our mouths while we are eating it.

LESSON MATERIALS:

IMAGE 1 – Sensory perceptions

IMAGE 4 – Hearing: the ear

Recorded sounds from the school kitchen

Suggested Lesson Contents

Go through *Images 1 and 4*, which show what our sense of hearing is composed of and how it works. The children can also be given the task of researching facts about the ear and hearing, and presenting the results to the class.

What does sound tell us about the food we eat? Can you hear if the food is raw, cooked, deep fried or mashed? Ask the children if they perhaps get hungry if they hear the fridge door open? If so, why is that?

Ask them to describe what it sounds like when they bite into a juicy apple or nibble on a raw carrot.

FACTS

The journey of sound through the ear

Hearing is not only the sound we hear, it is even an important aspect of our speech. Also, we use our sense of hearing as an orientation tool.

The sense of hearing works thanks to three ear parts: the outer, middle and inner ear. The outer ear includes the outer ear, the auditory canal and the ear drum.

What we actually hear is sound waves that are affected by the outer ear and the auditory canal before they make the thin ear drum vibrate. The middle ear then transfers this movement further with the aid of the auditory bones: the hammer, anvil and stirrup. They are in turn connected to the cochlea, which together with the semi-circular canal forms the inner ear.

The cochlea is filled with a liquid that starts to move when the auditory bones are pressed against its entrance. Along the walls of the cochlea several thousand hair cells form a carpet which is extremely sensitive to the movements that the sound waves have caused in the liquid. When the hair cells react by moving, a signal is

sent to the brain via the auditory nerve – and only then can you hear what is actually making the sound.

A clever reflex in the middle ear protects us from hearing damage caused by loud noises. Unfortunately, it does not work when loud noises are sudden and unexpected. Those types of noises are therefore particularly bad for our hearing.

Sound can make us feel good

Some sounds are better than others. Most of us like to listen to music for example. If it is music that we like it can even make us feel good or better. Research also shows that hearing sounds from nature make us feel good, such as birdsong or the sound of the ocean waves.

In today's society, it is not sounds that are the challenge, but the pursuit of finding silence!

Sound does not just come from the food

Scientists asked consumers to test the same crisps from two different bags. The first group were given crisps packed in a bag that rustles, while the second group were given crisps in a softer bag. Despite the crisps being exactly the same, the group with the rustling bag found the crisps crispier and more flavourful than the group given the softer bags.



Food that makes noise

Our hearing tells us more about food than we might think. What happens if we pour a glass of sparkling water and it does not bubble? We immediately suspect that the water has gone flat. Some may be less tempted to drink it, while others who do not like fizzy drinks might prefer it that way.

Food also tells us things with the noises it makes when we eat it. Bread will tell us if it is soft or hard and the sound of our cereal reveals if it is crispy or soggy. It is important to try out ingredients and learn to recognise what the sounds mean.

What should you serve to create the loudest meal in the world? And the quietest? Let the children discuss and practise finding different expressions for auditory perceptions that can be connected to the meal.

Disruptive noise

Do some children find it difficult to eat when there is a lot of noise in the school dining room? If so, they are hardly alone. Our digestion is affected by sound, usually for the worse. The sensory characteristics of the food (how it feels, tastes, smells etc.) are also perceived differently in a noisy environment. The food simply tastes less appealing, and part of the meal experience disappears.

Descriptions of food

Our expectations of a meal can differ depending on how it is presented in words. Spaghetti Bolognaise with vegetables might sound quite different if it's presented as "Sautéed hand-reared rare-breed cattle mince in a lightly spiced sauce of sun-ripened tomatoes, served with freshly made Italian pasta, aged Parmesan cheese and al dente spring vegetables".

Descriptions can be used to evoke memories, perhaps in the form of geographic locations and nostalgia (grandmother's pancakes) or sensory experiences (using words such as peppery, crispy).

EXERCISES

7.1 What does the food sound like?

PURPOSE:

To investigate how hearing impacts our taste experience.

MATERIAL AND INGREDIENTS:

- Apples: half an apple per child
- Bananas, half a banana per child
- Crispbread/Crackers, one per child
- Soft bread, half a slice per child
- Ear plugs or headphones (preferably noise cancelling)

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- Hand out apples and bananas to all the children.
- Ask them to taste the fruit while holding their hands over their ears or using the ear plugs or headphones.
- Discuss and make notes in their Taste Books.
- Then hand out crispbread/crackers and soft bread. Ask the children to taste both while holding their hands over their ears or using the ear plugs/headphones.
- Then let them listen to what it sounds like when they eat without covering their ears.
- Discuss and make notes in their Taste Books.

7.2 Noises from the School Dining Room

PURPOSE:

To investigate how the sounds around us affect our experience of the meal.

MATERIAL AND INGREDIENTS:

- Juice, fruit, vegetable or sandwich, one per child
- Glasses or mugs
- Napkins
- Mobile phone with recording function or other digital device that can be connected to speakers

PREPARATION:

Record noises from the school dining room when it is at its noisiest. Make sure that the recording is at least five minutes long.

DURATION:

Approximately 20 minutes + writing up.

STEPS:

- Serve something that most of the children like, such as fruit, vegetables, juice or a sandwich for each child. Play the recording with sounds from the school dining room and ask the children to taste and make notes.
- Turn off the recording. Now ask the children to taste the food again when it is quiet.
- Do it taste any different? Discuss and make notes in their Taste Books.

7.3 We listen to the food!

PURPOSE:

To explore the importance of hearing on the taste experience.

MATERIAL AND INGREDIENTS:

- Ingredients that make noises, such as banana, rice, bread, apple, carrot
- Materials that make noise, such as plastic bags, foil, baking paper
- Kitchenware that makes a noise, such as a whisk, water jug and glasses, pots and lids, potato peeler, coffee cup and plate

DURATION:

Approximately 20-25 minutes + writing up.

STEPS:

- The teacher supplies ingredients and kitchenware that make a noise.
- Children stand behind the screen and create noises while the rest of the class is guessing what tool is making the noise and describe the noise in words.
- Make notes in their Taste Books.
- The children can also be divided into small groups and, with the help of sound, present a particular dish, a cooking sequence or a meal situation.

7.4 Does the name of the food matter?

PURPOSE:

To become aware of how words and names of dishes can create expectations and associations.

MATERIAL AND INGREDIENTS:

- Paper and pen
- Smartboard or similar

DURATION:

Approximately 30-40 minutes + writing up.

STEPS:

- Divide children into groups. Each group is asked to come up with a name for a dish, for example a dessert or a pizza. The group then jointly agree what are the ingredients of their dish. Example: the dessert “Pink Dreams” can

contain vanilla ice cream and strawberry jam. When all groups have composed and named their dishes, children write the names on the board. The rest of the class is then asked to discuss what ingredients might be included in the dish based on its name. Did the associations the name created correspond with the ingredients?

"Pink Dreams" might for example be meringue with raspberries.

- Ask the children to discuss the importance of the name of the dish in creating our expectations and associations. Has anyone ordered a dish that did not live up to expectations? Try to come up with more creative names for common dishes.

Connecting to school lunches

- Record lunch sounds in the school dining room.
- Then play this recording during the hearing lesson. Discuss how sounds affect the meal experience. Possibly serve something to eat or drink in the classroom.
- Then play calm music and discuss how this affects the meal experience.
- If possible, try playing calm music in the school dining room and then let the children observe its effect on the dining room environment and the meal experience. Discuss and make notes in their Taste Books.
- Look at the school lunch menu and discuss how the meal of the day could be described to attract different groups of people – a tourist from Japan, an older person from the country, or a TV chef for example.



CHAPTER 8 - TASTE AND DISTRUPTIONS TO OUR EXPERIENCE

The purpose of the lesson is to make the children aware that there are many different factors that impact our meal experiences. The learning outcome is to show that you can learn to like things, by daring to try them, learning to recognise the taste, and improving your ability to accept it. But it is not just the ingredients, or the dish, that decides whether we like it or not. The environment around us also impacts our experience. Some things are more disruptive than others.

LESSON MATERIAL:

IMAGE 1 – Sensory perceptions

Suggested Lesson Contents

Go through what can be experienced as disruptive while we are eating. The food itself may be disruptive, but the environment around us can contain disruptions too. A disruptive taste experience could, for example, be a metallic aftertaste, or a dehydrating, burning or tickling feeling. Sound from the food itself, or the environment where you eat, can also be disruptive (see the chapter on hearing).

Additives such as food colouring and taste enhancers can also be disruptive for the food experience, as can products that are strongly associated to a particular advertising campaign.

Discuss with the children and ask them to list things that they themselves find disruptive in connection with meals.

FACTS

It tastes metallic

A metallic taste gives the tongue a sensation of being in touch with metal. Put simply, it feels like licking a lamp post.

When it comes to cooking fat, a metallic taste can be a sign that the product is about to go off. Milk that has been left outside the fridge for too long can also have a slightly metallic aftertaste.

Food that has been in opened tins for too long develops an unpleasant metallic taste and should be avoided because material from the tin could have seeped into the food. The same is true for drinks that have been stored in metallic containers, such as iron or copper, or water from a tap that has not been used for a long time. Some metals are bad for our health in large concentrations and should be avoided. Normally a metallic taste is experienced as something negative.

Making our mouths shrivel

A dehydrating sensation is caused when the mucous membranes shrivel and a rough feeling develops in the mouth. This is a phenomenon that is common when we taste things such as red wine, coffee, cocoa or raw rhubarb. Most adults have learnt to accept the phenomenon, as it is not necessarily considered bad or unpleasant, while children and teenagers often need to get used to the feeling in the mouth to perhaps eventually be able to learn to appreciate it.

Help, my tongue is burning!

We have probably all eaten something extraordinarily spicy at some point. When the whole mouth is burning and it feels as if your tongue is about to catch fire - it is called a burning taste sensation. This can be caused by, for example, chilli or alcohol. Many adults have learnt to like that burning feeling, while children and people unused to the feeling often find it difficult to like.

It is tickling my nose

A tickling sensation is quite common in food and drinks, especially when it comes to fizzy drinks. But it can also be found in certain vegetables, such as radishes, onions, mustard, wasabi, ginger and strong spices. Pickled vegetables are an example where the tickly feeling is intentional. Many small children dislike fizzy drinks as they find it unpleasant when it “tickles their nose”.



Disruptive noises and arguments

Sound and noises can disrupt our meal experience on a purely physical level but also psychologically. See Chapter 7 about hearing. Fighting at the dinner table is one way to make the meal experience worse – no matter how tasty the food is, it tastes worse when you are exposed to negative feelings.

Tickling sensations

Pour tap water and fizzy water for all the children. Let them taste the water and describe their experience in their Taste Books. Describe what the word tickling may mean.

EXERCISES

8.1 Disruptive food experiences

PURPOSE:

To practise recognising the characteristics of different disruptive taste experiences.

MATERIAL AND INGREDIENTS:

- Rhubarb – fresh if possible, or frozen is fine
- Fresh chilli, one small piece per child
- Knife and cutting board
- Teaspoons
- White bread, one small piece per child
- Cold water
- Glasses or mugs, two per child
- Menthol, eg mouthwash

DURATION:

Approximately 30 minutes + writing up.

STEPS:

- Start by letting all the children taste a small bit of raw rhubarb. If it is not in season, you can discuss how it feels to take a bite of a stick of rhubarb. Then discuss the concept of dehydrating sensations. What is it that happens in the mouth? Make notes in their Taste Books.
- Then distribute one very small piece of chilli on a spoon to each child, together with a piece of bread for each child. Let them smell and carefully taste the chilli. Discuss the concept of burning sensations and make notes in their Taste Books.
- Then let the children bite off a piece of bread. How did their experience change when they had some bread in their mouths? Compare with the experience of taking a sip of water. The water spreads the heat around the mouth while the bread soothes the burning feeling.
- Pour some water into mugs, two per child. Add a couple of drops of menthol to one mug. Hand out the mugs. Now ask the children to taste the water in both mugs. Discuss the concept of burning and cooling sensations and make notes in their Taste Books.





CHAPTER 9 – TASTES FROM AROUND THE WORLD

Tastes from all over the World

The purpose of this lesson is to show that food is often connected to both our culture and our geographical environments – and these are often connected. Let the children think about the connection between climate and geography, traditions, religions and the cultivation of food. Which dish can be found in which country? How does the food differ between different regions of your country? Why does this happen?

The lesson is an excellent opportunity for children to explore their own food culture, and to develop an understanding of food cultures in other countries. Children with an international background can tell the class about their tastes, spices and ingredients. The children can also do group projects or research tasks where they are given the opportunity to find out as much as possible about the food culture in a certain country. This could even involve exploring different traditional Swedish dishes, including those that are at risk of being forgotten.



FACTS

Nordic Food

The rest of the world are now very aware of Nordic cuisine. But what is really Nordic food and why does it look like this?

Food culture in Sweden and other Nordic countries is characterized by being located so far north geographically and having four different seasons. We simply do not have that much time during the year to grow grains, fruits and vegetables. That is why it is important for us to find ways to preserve what we have harvested so that it will last throughout the autumn, winter and spring, until the next harvest. Therefore, we have *salted*, *dried*, *smoked* and *soured* at all times.

For the same reason we have learnt to bake bread that lasts for a long time, such as crispbread, crusts and rye bread. Previously cows gave milk during the summer, but produced a very small yield during the winter. Making butter and cheese became a good way to take advantage of the milk. Our food culture is, in other words, very much influenced by different preservation methods. Fridges and freezers are pure innovations if you look at our history in a longer perspective.

In comparison with Mediterranean countries, the conditions look quite different from us. Their spring and summer time is considerably longer, which means they can grow and harvest fresh produce during a much longer time of the year. More sun and heat gives less stress in taking care of the raw materials, which is the reason why their food culture is not characterized by preservation like ours.

Nature's Pantry

Just as there are differences in Nordic countries cuisine, there are also differences within Sweden. Food traditions look different depending on where in the country you live – in the north, south, on the coast, inland, in the mountains or in the forest. In many places there are strong traditions to eat fish and seafood from our coasts, rivers and lakes. The fish is often preserved by smoking, salting and marinating. In the forest we find wild animals such as moose, deer, hare, wild boar and birds. The forest pantry also offers many kinds of berries and mushrooms. We dry them and use them to make jam and juice. Everything to take advantage of nature.

In the past all food was locally produced. We simply went outside to fetch what was there and did our best to make it last as long as possible. Our diet was not as varied as today, but on the other hand it was very good for the environment. There was no long term transportation or the harvesting of fruit and vegetables too early to then be able to send around the world. We had to use what was available around us. For better or worse.

Travelling and Food

We travel more and more, as well as our food. This opens up new worlds and creates curiosity and understanding of new flavours, cultures, ingredients and dishes. But at the same time, it is hardly sustainable in the long term for our food to be transported all over the world by train, plane, ship and car. Both the food and the environment suffer.

On the other hand, we gain new knowledge and inspiration through travels and meetings. For example, meatballs and cabbage rolls came to Sweden from Turkey hundreds of years ago. Nowadays, there are so many imports that they are almost impossible to count. But it was not long ago when Swedes turned their noses up at garlic or olive oil. Pizza, tacos, kebabs, hamburgers and lasagne are now

at least as common on our dinner tables as Swedish sausage.

Now and Then

In many countries, people cherish their local ingredients, dishes and cuisine more than we do here in Sweden, but recently the same phenomena has become more common among Swedish food enthusiasts. We are also becoming far more conscientious about what we eat and choosing to eat more organic or vegetarian food. There is also growing interest in eating more in tune with the seasons. Seasonal food can potentially be cheaper, tastier, more nutritious and more environmentally friendly.



EXERCISES

9.1 Food cultures in different countries, or Now and Then

PURPOSE:

To show that our eating habits are connected to both our culture and our geographic conditions.

MATERIAL AND INGREDIENTS:

- Searching for information online and in books

DURATION:

Approximately 3 x 40 minutes + time for presentations.

STEPS:

We suggest letting the children work in pairs. Depending on what grade they are in, the theme for the project could be:

- Food traditions in Sweden (different regions)
- Food traditions Now and Then
- Food traditions in different countries in Europe
- Food traditions in different countries around the world
- Food traditions during various holidays of the year
- Food traditions during various holidays in other countries or other religions

The children can look for the information and write about a dish and then prepare a presentation for the rest of the class or group. Try to find connections between the region's environment, climate, history, culture and traditions. Why do people eat these particular dishes and products in that particular place? The presentation can be done using presentation software (PowerPoint, Keynote etc.).

Examples of questions for projects about food traditions in the World or in Europe for the children to research could be:

- What dishes are common in the country?
- Are there any dessert traditions in the country?
- Are there any local specialities?
- Which ingredients are commonly used?
- What habits or routines are there around meals?
- Example of a typical recipe from the country (this can be collected in a joint recipe book)

After the presentations, the class can discuss and compare the different food cultures presented. What is different about them? Talk about meals based on the healthy plate model – what parts are there? (Carbohydrate, vegetables, fruit, berries and protein). Discuss the children's favourite dishes and what countries or regions they come from. Which dishes and countries the children would like to have in their school lunch menus?

Connecting to school lunches

- Select dishes on the menu and find out where they come from. Maybe the dish could be complimented by authentic sides or sauces that the children can help make? Their research projects about the country or region could be exhibited in the school dining room when the food is served.
- If possible, try to arrange a theme week or theme day in collaboration with the kitchen staff, with selected dishes from different countries or regions served. The children can make an exhibition for the school dining room about food culture, dishes and tastes from different parts of the World or Sweden.
- Another option is to connect your lesson with a home economic lesson and let the children make the dishes that they have been researching.



CHAPTER 10 – THE FUN FINALE

Finale

This lesson is reliant on the resources of the school. The ideal is a shared restaurant meal where the children get to try out their new knowledge in real life and talk together about the meal. A combination of a celebration and critical thinking. If a restaurant meal is not possible, something similar can be arranged. It can be enough to have a meal in the school dining room or the classroom. Maybe even a dessert? Or simply serve the food in the classroom and make sure you decorate a little extra.

Whatever shape the finale takes, it is an excellent opportunity to discuss etiquette. How do you behave in a restaurant? How do you place an order? How do you make the atmosphere comfortable around the dining table? Practise together.

The most important thing is that you somehow celebrate the SAPERE programme together, making it into something special. You have, after all, learnt a completely new way of thinking and that is worth celebrating.

Suggested Lesson Contents

Prepare the children for the restaurant visit or the celebration meal. Talk about the purpose being as much about having a nice time together as it is about analysing and discussing the food that is served. The children get to practise what they have learned through SAPERE while at the same time having a celebration to end the taste school.

If possible, try to arrange a good quality menu where the children recognise the ingredients (preferably not fast food). If you go to a restaurant you could ask the staff to present the dishes and tell the children a bit more about what it is like to work in a restaurant and how they create new dishes. Try to schedule the visit for when the restaurant is not busy, so that the staff have time to talk to the class.

At the end of the meal each child receives:

- His/her Taste Book
- A diploma that certifies that they have completed the SAPERE programme (see end of the manual).

TIP: If a restaurant meal is possible, it can help to prepare both the class and the restaurant early on in the project. You could invite the chef or kitchen staff to one of your lessons, so that they understand the goals of the programme. Parents could also be invited to the restaurant.

Connecting to school lunches

- If it is not possible to go for a restaurant meal, this is a golden opportunity to try to collaborate with the school's kitchen staff. But remember that the lesson is to be seen as a study visit. It is not just about eating and analysing a lunch; the purpose is also to get to meet and talk to the staff and experience the atmosphere and decorations.

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Image 1: Sensory perceptions

Sight



- Shape
- State
- Appearance
- Size
- Colour

Hearing



- Sounds from the food
- Sounds from the environment around us
- Volume

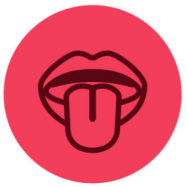
Smell

Associations with:



- Fruit
- Vegetables
- Spices
- Flowers

Taste



- Sweet
- Salt
- Sour
- Bitter

Touch



- Temperature
- Consistency
- Chemical sensations

Image 2: The five senses





Images: Vecteezy.com/zhaolifang

Image 3: Sight – the eye

Image 4: Hearing – the ear

Image 5: Smell – the nose

Image 6: Taste – the tongue

Image 7: Touch – the skin

Image 8: The five basic tastes

Image 9: Smells

Image 10: Touch

Image 11: Ways of presenting foods

Option A

Option B

Image 12: Ways of presenting foods

Option A

Option B

Worksheet 1: Basic tastes

Worksheet 2: Comparative tasting

Worksheet 3: Smells from home and other places

Worksheet 4: Spice and plant smells

Worksheet 5: Flower and fruit smells

Worksheet 6: Oils

Worksheet 7: Honey

Suggested content for an information letter for parents/guardians

What is SAPERE?

SAPERE method comes from France and is a learning programme of sensory education. It allows the children to learn about their senses, become curious and develop tools for analytical thinking. The word Sapere is Latin and means “to taste” and “to be able to”.

The goals of the SAPERE method are:

- to become aware of your senses and tastes
- to practice the ability to express your opinions, both verbally and in writing
- to dare to try new ingredients and dishes
- to increase the variety of what you eat
- to experience food and meals as something exciting and fun
- to understand the importance of meals for our culture, nature, environment and health
- to develop into a conscious consumer

The SAPERE method consists of a number of different exercises which help the children to trust and listen to their own senses – not those of their friends. Examples of experiments include: What does an egg yolk feel like? What does it sound like when you chew on crackers? Can a lemon sweet be red? Can we trust our senses?

The exercises involve coming into close contact with, and tasting, a number of ingredients and foods. Therefore, we would be grateful if you could fill in the form below and send it back to us as soon as possible.

Kind regards,

Name:

ALLERGIES OR OTHER FOOD RELATED RESTRICTIONS

…… has the following food or ingredient allergy/intolerance/restrictions (please specify):

……
……
……
……
……..

……

Signature by parent/guardian

DIPLOMA



……

Name

Has completed sensory training, based on the SAPERE method, and learnt to be aware of his/her own senses and tastes,
in order to experience food and meals as something exciting and fun and to develop into a conscious consumer.

……
…

Date / place

……
…

Teacher