

## TO THE WORLD OF FOOD WITH THE AID OF THE SENSES

THE SAPERE METHOD AS A SUPPORT FOR  
CHILDREN'S FOOD AND NUTRITION EDUCATION IN  
DAYCARE CENTRES

2009 • Aila Koistinen and Leena Ruhanen (eds.)



Graphic design: Laura Vainio

Photographs: Files of the Detective Sapere and the Experimental Kitchen:  
Leena Ruhanen and the Pohjanlampi, Kotipesä, Taikalamppu, and Pupuhuhta daycare centres.

The publication materials have been collected in the Detective Sapere and the Experimental Kitchen Children's Daycare Services project during 2004-2005.

Social and Health Services Centre of the City of Jyväskylä reports,  
1/2009

Sitra, Finnish Innovation Fund

ISBN 978 951-563-657-7

Helsinki 2009



City of Jyväskylä

**SITRA**

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## Foreword

Sitra started the Food and Nutrition Programme ERA in 2005. The main aim of the programme was to promote the competitiveness of the Finnish food and nutrition industry and to promote the health of citizens by nutritional means. Children from daycare to upper comprehensive school level were chosen as the target group for the health promotion.

To improve the health and nutrition of children and youth, the so-called Järkipala project was implemented. In the project, the public and private sectors cooperated in many ways to construct a world of healthy nutrition. The project has enabled several research, development, and pilot operations. New information about truly functional practices has been obtained from these operations.

Within the framework of the project, several tools and guides aimed at people working in schools were implemented in order to ensure that the teachings and experiences of the Järkipala project were put to genuine use by schools and students.

This guide, "To the World of food with the Aid of the Senses - the Sapere method for nutrition and food education in daycare centres", came about based on several previous projects. The ERA programme became a part of the implementation of the guide, so that also daycare centres could receive new resources. We hope that this guide will be circulated as widely as possible and will support the early education of children throughout Finland.

We thank all those who have participated in the preparation and publication of this guide. In particular, we would like to thank the editors, Aila Koistinen and Leena Ruhanen.

Helsinki, November 11, 2008

Anu Harkki, programme director, Sitra, and  
Markku Mikola, project head, Sitra

## Foreword

We are always seeking new and effective methods for promoting the food culture and nutrition education of children. Children's eating problems, unfavorable changes in eating habits, and changes in attitudes towards food and eating in general have brought about current challenges that have also led daycare teachers and nutrition experts in Jyväskylä to consider what could be done about this matter. Observations of the way in which children's eating habits are becoming set are alarming when looking at them from a national health perspective.

In addition, it could be seen that nutritional differences, such as scant use of vegetables and fruits and growth in the consumption of sweet foods, such as juices, soft drinks, and sweets, were connected with the children's family background. Old methods seemed to be no longer sufficient for the new challenges connected with children's nutrition: there was a need for development of good practices and practical methods for example for solving eating problems of various levels, coping with food allergies, promoting varied eating habits among children, and combating increasing obesity.

In Jyväskylä, the eating habits of children got attention already in 2000-2002 through the "Food for a better day" campaign. During the campaign, the Sapere method was tested for the first time in the health education of fifth-graders at the Kypärämäki School in Jyväskylä. The experiment showed that with the Sapere method, school catering can be influenced by making the students' food habits more varied and by reducing prejudices towards new foods.

From these positive experiences came the idea that nutrition and food education of children in daycare centres could be improved with the help of the Sapere method, making use of the expertise and pedagogical skills of daycare workers. As a result of multiprofessional cooperation, daycare centres in the city of Jyväskylä applied for and received project funding for 2004-2005 for the "Detective Sapere and the Experimental Kitchen" nutrition-education project for daycare-aged children. The project was funded by the Ministry of Social Affairs and Health.

The goal of the Detective Sapere and the Experimental Kitchen project was:

- to create a positive and natural relationship towards food and eating
- to support and encourage children to become familiar with various foods using all their senses
- to familiarise children with the origin of food (growth place, domestic animals, processing)

- to support and encourage children to use linguistic expressions for experiences connected with food and to respect the experiences of others
- to support the formation of a varied food culture
- to involve parents in the nutrition and food education of children, taking into consideration how they themselves can support their children's varied food habits and positive attitude towards food and eating
- to test and develop the Sapere method of sensory learning applied to nutrition education in early education.

This operating manual is based on the experiences, development work, and action plans implemented in the project. The aim of the manual is to support nutrition and food education in daycare centres and to nurture food culture for children. The connecting thread running through the manual is the Sapere method of sensory learning.

Participating in the project were the Pohjanlampi, Kotipesä, Taikalamppu, and Pupuhuhta daycare centres in Jyväskylä and the family daycare workers of these centres, as well as the Pupuhuhta family garden. The target group was estimated to include 250 children with their families. About 60 workers were responsible for implementing the project. The children participating in the experiment were 1-7 years of age.

Warmest thanks

- to all the workers of the daycare centres in the city of Jyväskylä who participated in the project, who committed themselves to the development work, creatively and enthusiastically testing and applying the principles and procedures of the Sapere method without prejudice
- to the steering group, cooperating partners, and other supporters of the project.

Special thanks to public health nutritionist Arja Lyytikäinen and professor Hely Tuorila for their support and encouragement and the valuable comments that we received in writing this manual.

Jyväskylä, October 2008

Editors

## To the reader

The examples, ideas, and experiences in this toolbox were collected during the Detective Sapere and the Experimental Kitchen project. They are based on training, development work, and various project documentations and reports as well as the project appraisal. Not all the experiments and activities of the project fit into the manual, because the project material is very broad. The content of the book, including its examples, are also suitable, directly or adapted, to be used in early education (family daycare, club, and play activities).

Before the project began, there was no methodological information, literature, or material about the Sapere method in Finnish directed towards early education. For this reason, the participants in the project applied and developed the existing international know-how connected with Sapere's instructions for school-aged children for the needs, goals, and procedures of early education, whilst taking into consideration the national and municipal early education curriculum guidelines. An operating framework was created for the project in cooperation with early education experts and the interdisciplinary group of daycare workers and experts in the nutrition field. Each daycare centre implemented this framework taking into consideration their broader activity plans and special needs. The families were notified of the goals, operating principles, and contents of the project.

The workers involved in the Detective Sapere and the Experimental Kitchen project became familiar with the Sapere method through training before the start of the project. The training was planned and tailored according to the goals and needs of the development project. Experts in the nutrition and education field who were familiar with the Sapere method and have implemented it in a school environment, acted as trainers. In addition, even before preparing the project application letter, a brief pilot test was implemented, during which the suitability of the Sapere method for nutrition and food education in daycare centres was tested. After the training, each operating unit made its own project plan, which was implemented during the operating period 2004-2005.

In addition, the Swedish Sapere manual "Mat för alla sinnen" [Food for All Senses] aimed at children in comprehensive school (classes 4-6) was applied in the project. During the project, additional materials connected with the Sapere method were prepared. Mostly they have been produced by the workers and the project organisation. Producing special materials actually became one of the goals of the project, and this operating manual is one example of this.

The activity examples presented in this manual were tested in daycare centres with children of various ages, with the procedures, materials, and tools varying. The workers tested, without prejudice and creatively, how interested the children were and how capable they were to join in on sensory learning. Immediately at the start of the project, it became apparent that the daycare workers' own expertise and knowledge shaped the Sapere method into a functional, pedagogical entity in which the development levels of children of different ages were taken into account. In the manual, the suitability of the examples with regards to the age of the children is not strictly defined. The thought was that almost every example can be applied to and enrich early education work according to the children's developmental level.

The examples and ideas of the operating manual are one way to implement the Sapere method. Because the method is very practical, it gives possibilities for planning varied and rich activities. Sapere nutrition and food education can be adapted and implemented well even with very different starting points. The early education environment can be very different in its internal and external conditions: for example, small kitchens were in use in the project daycare centres for some groups of children, while some operated in their own very small group spaces.

Seasonal changes (feast days, autumn harvest), workers' special knowledge, possibilities offered by the environment (forest, local shops, marketplaces, nearby bakeries, etc.) as well as resources and participation (cooperation, support) of the parents brought their own special aspects to the activities of each daycare unit. It was especially



Figure 1. The sensory trip to the carrot starts with smelling and feeling.

motivating for the workers to notice that the Sapere method was suitable for children of immigrant families. Based on experiences, it was also noted that children who have problems with sensory integration and/or a need for other special support and education benefit from the method.

The activity examples that describe the Sapere method have been brought forth by utilising various sensory areas. The examples are described so that the reader also receives information about the foods, tools, and other materials used. Some example situations can be divided into smaller parts, and it is worthwhile planning them, as already noted previously, according to the children's development level and the size of the group of children. At the end of the activity examples, there is an "idea box," in which additional suggestions for Sapere activities are mentioned. In addition, at the beginning of some chapters, the reader is provided with a small "information box", in which information

about the human senses and sensory system is described briefly, based on the most recent research.

The main materials for the Sapere method are foods (raw materials, prepared foods, and food components) and food-preparation and eating tools, and other necessary items. Using the method does not require special food-preparation or study tools; the tools that usually belong to a Finnish kitchen are quite sufficient. The teachers also do not need a professional degree in food preparation. Hygiene guidelines for daycare centres are followed in handling food, but a special "hygiene passport" is not required of the staff. Interest in the world of food and food education are an adequate starting point. Mastery and application of the method do, however, require familiarity with the basic Sapere principles. With the examples, ideas, and information about experiences in this manual, the use of Sapere method will get off to a good start.

# 1. Children's nutrition and food education in early education

## 1.1 Values and evaluations related to the world of food

Adults transmit values related to food and eating to children in many ways. What do we say and how do we talk about food and eating situations? Do we reserve enough time to eating and preparations? How is the table set? By what means do we guarantee peace during eating for both children and adults? How well do we take eating into consideration as a physical, mental, social, and cultural whole? During the Sapere project, it was observed that it was important to discuss and go through these things with the education personnel, at the same time acknowledging and examining everyone's attitudes and values on the matter, and agreeing on common rules and procedures in the nutrition and food education of daycare centres.

For adults, the value of foods is often transmitted through the nutritional content, health effect, enjoyment, time spent in preparation, and the cost of the food. We talk about fast, waste, junk, everyday, and festive food when the children are present. For children, their set of concepts and values connected with food are just forming. These are learned and acquired in a very concrete manner through experiences: preparing food together with the family, shopping trips, picking mushrooms, pleasant eating situations, various sensory experiences with food, feelings connected with the eating situation (e.g. picnic on a fun nature trip).

Food is vital for us and, therefore, it is loaded with for example beliefs, history connected with individuals and society, feelings, and social needs and customs. In the Sapere method, studying food substances means that they can be touched with fingers, studied with various tools and in various ways, and admired; they don't necessarily have to be liked. The principles we learned long ago, "Don't play with food," "Eat everything on your plate," and "Don't criticise food" will have to be reevaluated and reconsidered.

In the case of children, it should be noted that their experiences and ability to report and perceive matters

connected with the world of food are different than in the case of adults. For example, lack of food or starving children in developing countries do not have a long-term effect on the eating and food evaluation of small children. For them, food can be sensed, perceived, felt, and experienced here and now.

## 1.2 Small steps on children's path to the world of food

Children take small steps in learning their taste habits. Doubt and fear of new food, or neophobia, is at its strongest in 2-3-year-olds. An infant has only little inborn readiness to relate to food. It has been shown, however, that they reject bitter and sour tastes and show pleasure when tasting sweet tastes. Pleasure in eating salty and fatty foods develops gradually. The ability to sense saltiness develops by the age of six months. Saltiness can become a pleasant experience. Researchers have observed that the more a child notices that a food substance is available, the more often it will be chosen later. Children need to taste something 15-20 times to become familiar with this new food substance. When a new food substance is offered simultaneously with one known to be pleasant, it will be easier for children to find the new substance pleasing.

Nutrition expert Ulla-Kaisa Hursti from the National Food Administration of Sweden wants adults to pay attention to the following matters in children's eating situations:

- it would be good for an adult to eat the same food at the same time with children (e.g. parents, daycare workers)
- adult should show interest in child's eating
- adult's task is to encourage a child to taste
- comfortable things are talked about at the table, food situations should be pleasant and positive
- it is worthwhile for an adult not to give up, even if a child refuses to eat something the first time
- child must not be forced to eat
- child must not be bribed to eat



- adult decides what will be offered – child decides how much he will eat (or whether he will eat at all)
  - child is not given food “on order” (not always what the child wants)
  - child has the possibility and he is encouraged to participate in food preparation, setting the table, and all food activities according to his abilities
- a preparation of meals, and the origin of foods. In many other European countries, including Germany and Italy, similar nutrition and food education methods have been used. In France, the Sapere method has helped in understanding the cultural differences within the world of food in different countries. The new Finnish application of the Sapere method can be found from the website of SITRA (Finnish Innovation Fund), where the Makukoulu [Taste School] experiment is presented, with examples of implementation in some Finnish lower comprehensive schools.
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### 1.3 The Sapere method

The Sapere method was developed by the French chemist and ethnologist Jacques Puisais. The Latin word “sapere” means to taste, feel, and be brave. The Sapere method is based on sensory practice, in other words, sensory experiences and their importance in getting to know food and learning eating habits. Behind Sapere method is the concept of humanistic empirical learning, in which emphasis is placed on learning through experience and exploration.

In the Sapere method, by making use of the senses of smell, taste, sight, hearing, and feeling, the child is made to learn new things about food, food substances, and their preparation through experimenting and experiences. Through learning by doing, the child receives a unique and individual overall sensation of a certain topic connected with food, in which old and new knowledge is combined into a new experience. The idea is that as curiosity and desire to explore are aroused, the child faces his own prejudices more bravely, recognises them, and starts on an adventure into the world of food by testing his own limits.

The Sapere method emphasises supporting and listening to the child’s own expression. Children are encouraged to give their opinions about food, food substances, and eating. Children’s sensory experiences are not seen as right or wrong, because all sensory experiences are individual and personal. Children are not forced to taste any food substances, but during the Sapere project, it was noticed that the courage to taste was very contagious.

The Sapere method was applied in Sweden among children of both comprehensive and pre-school age. Inspired by the good results, the National Food administration of Sweden adopted the Sapere method as a tool in its efforts to improve the reputation of school food. The Swedish adaptation of the Sapere method contains plans for ten teaching sessions, the contents of which are the human senses, the composition and

The results obtained from the Detective Sapere and the Experimental Kitchen project were positive and very similar from the viewpoint of both parents and workers:

- children’s consumption of fruit and vegetables increased and became more varied
- the consumption of food increased in daycare centres
- children were encouraged to taste foods that were previously unknown to them
- children participated more enthusiastically in food preparation and learned to become skilled users of tools – even the youngest ones
- when children could make food themselves, they ate better and with more variety
- the supporting example of eating set by other children encouraged the more prejudiced eaters to taste new things
- in the parents’ opinion, the children were more willing and braver to taste foods as well as participating and asking to be involved in preparing food at home.

### 1.4 The Sapere and early education plan

The Sapere method fits in well with the goals and operating principles and orientations of Finnish early education. It can act as a guideline and method for food and nutrition education in daycare centres. In the national early education curriculum, it is noted that it is characteristic of children to play, move, experience and express art, and explore (see Figure 1.1). Through his own activities and peer group relationships, a child receives significant experiences that are supported by the early education environment (see Chapter 6) and the teaching environment. The welfare of the child and the child’s peer group are taken into account by developing parenting partnerships (see Chapter 10) between daycare staff and homes and by strengthening interaction with parents. The child learns through his own actions, and in encountering new things, the child uses all his senses as an aid in his learning.

### The characteristics of children's actions

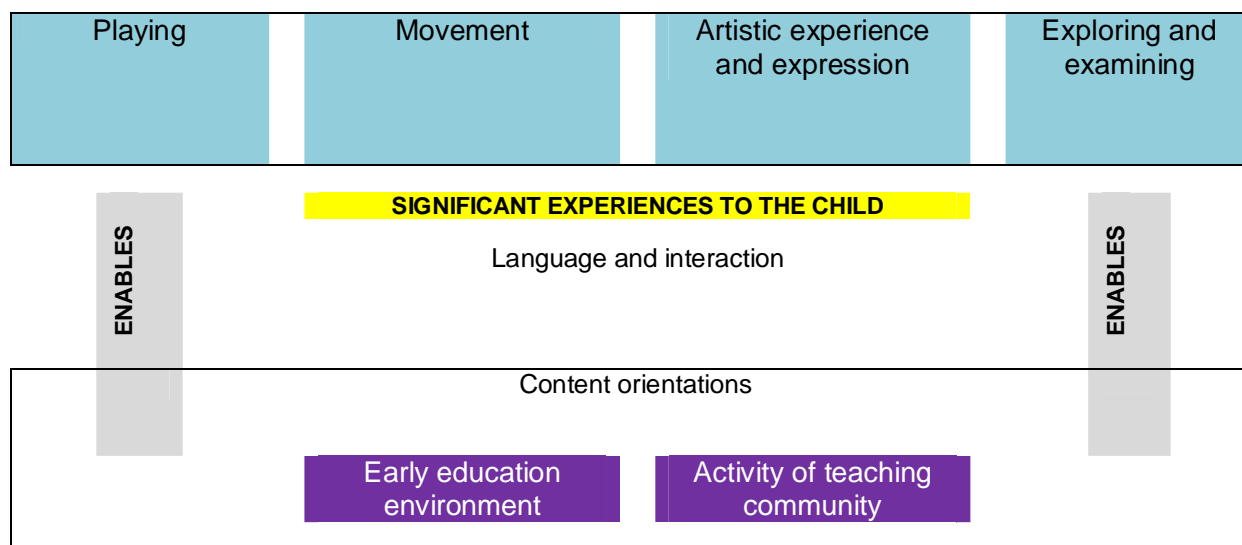


Figure 1.4.1 A child's own way of acting, Stakes 2003.

In striving to teach children new things and selecting pedagogical methods, it is good for the teacher to remember that learning is a comprehensive phenomenon for the child. The child does not necessarily even notice that he has learned, only the adult notices. Things connected with food and nutrition (knowledge, skills, attitudes, etc.) are learned in the same way, with the small steps mentioned above: being interested, studying, experimenting, playing, and interacting with other children and adults.

The emphasis in the Sapere nutritional education method is children's experiences, which they receive through exploring the world of food and its phenomena, discussing and sharing their experiences, taking trips to the sources of food, and playing for example with tasks that are part of

food preparation, both outdoors and indoors. The practicality of the Sapere method, taking children into consideration individually, and small-group activities are applicable to various early education environments.

In daycare centres, eating is part of the children's basic care, education, and instruction. Food is a central part of the child's care, it is a requirement for both growth and development. With nutrition and food education, we strive to develop the child's own capabilities for eating independently, in a varied and adequate manner. Taste preferences, in other words, which foods in particular a person likes, develop already in early childhood. Early education can support the child in developing his food preferences into a favorable direction from the health point of view.

## 2. Caregiver's cooperation as a support in nutrition and food education

### 2.1 Multiprofessional cooperation

In addition to caregivers and daycare personnel, many others experts and workers in the fields of education and health are responsible for children's welfare. From the viewpoint of the Sapere nutrition and food education method, the workers who decide on and prepare food are in an especially important position. It is important that the personnel responsible for daycare nutrition know the way in which people working with children implement nutrition and food education and develop it. Workers responsible for menus and food preparation should update their knowledge about children's eating and food customs: how children eat, how they relate to new foods, and what messages are coming from the parents. The goal is seamless cooperation, where the ways in which children will be supported and guided to the path of healthy, varied nutrition are discussed with the teaching personnel.

In the activities of child-welfare and dental personnel and other health-care professionals, the healthy nutrition of children is one of the most important goals and a central part of promoting the lifelong health of the population. Preventing obesity by learning the balance of eating and exercise is important from as early as childhood. Neighbourhood and family exercise and the exercise events of daycare centres can combine these important principles for growth and development in a clever way by taking both exercise and nutrition into consideration. A ski trip of the daycare centre with a campfire lunch is an exciting exercise event and food experience that children will remember for a long time. Multiprofessional support can be obtained, for example, from health-care workers, dentists, physical education instructors, as well as from experts in related fields that can be found among the group of parents.

In Finland, there are also many organisations and associations linked to nutrition, food culture, food education, and processing, whose services and contact possibilities support children's nutrition and food education directly or indirectly. Industrial companies and other operators are interested in cooperating with children's welfare, based on social

responsibility and their own value bases. In Jyväskylä, during the Sapere project, the children for example visited farm entrepreneurs (they prepared spaghetti themselves), farm tourist sites, marketplaces, a restaurant, and nearby food shops.

### 2.2 Cooperation with parents

It is especially important to challenge parents to participate in joint nutrition and food education between the daycare centre and the home. The parents should be able to know that their children are being looked after and what is being done with them in daycare centres. In the Jyväskylä Sapere project, parents participated in the project in many different ways, and had the opportunity to become familiar with the Sapere method, e.g. at parents' meetings and in activity workshops. More detailed examples of cooperation between daycare centres and parents are given in Chapter 10 of this manual.



Figure 2.2.1. This hedgehog was made with father and mother in a family evening of the daycare centre

### 3. To the world of food with the aid of the senses

The Sapere method guides the children to the world of food through all their senses. With the aid of his senses, the child receives feelings, experiences, and information that he studies on his own and together with other children and adults. Information that has been received with the senses is processed by discussing and helping the child to put it into words and describe his experiences. The experience of each child is unique and no right or wrong opinion exists. The appearance, composition, taste, and smell of foods create a whole sensory experience that each child encounters and understands individually.

It is important for the child to learn to know his own senses and sensory areas, as well as how they work in different situations. In becoming familiar with his own senses and body, the child sees how many different ways we have to receive information about the world of food. All senses affect the formation of experiences, which stay in our memory for a very long time as mental images and feelings. Every adult remembers at least one experience or feeling (positive or negative) from his childhood that is connected with food. It is good for the adult to return to his own experiences in thinking about his attitude towards nutrition and food education as an educator and in wanting to make it possible for the children to have a variety of experiences from the world of food.

Learning and learning situations based on the senses can be enriched and enlivened in many ways. During the Detective Sapere and the Experimental Kitchen project, children were led into the world of food with the aid of stories, drama, play, pictures, and various themes with plots. Each daycare centre chose suitable and interesting ways for itself. These ways are presented in the next chapter.



#### INFORMATION BOX

##### SENSES

A person obtains information about the world around him by means of his senses. As a result of being sensed, information changes into a situation experienced internally, which guides our behavior.

The human sensory system can be divided into three parts:

- sensory receptor cells that receive sensations
- nerve fibres that transmit nerve impulses that arise from stimulation of sensors
- brain areas in which a sensation is registered, interpreted, and attached to other information.

The senses are often divided into physical and chemical senses. The division is based on what stimulations the senses receive. The senses of sight and hearing and most of the sense of feeling react physically to stimulation, for example to wavelength of light or vibrations in air. The senses of smell and taste react to chemical stimulation, to the fact that a compound causing odour or taste binds temporarily to a sense receptor cell.

The operating area of each sense forms a sensory area. Through the various sensory areas, received information is combined in the brain, where several brain areas participate in the transmission of the sensation. The more naturally the combination effects between stimulations are connected to each other, the stronger they are. In this way, it is learned that certain odours and tastes belong together, for example, the odour of vanilla appears in connection with sweet, but not with salty. Earlier experiences affect the formation of the general view of food.



[NÄKÖ = SIGHT, HAJU = SMELL, TUNTO = FEELING, MAKU = TASTE, KUULO = HEARING]

**Figure 3.1.1**

Cheese Week at a daycare centre. With the aid of picture cards, the children concentrated on studying the subject through one sense at a time.



Figure 3.2.1. Sense fairies at the Taikalamppu daycare centre in Jyväskylä: Sensorii (feeling), Aromii (taste), Ororii (hearing), Okulii (sight), and Odorii (smell).

### 3.1 Sensory cards

Using sensory cards, the various senses can be illustrated and children can be guided to use one particular sense at a time. Sensory cards can be made by adults and children together, either by drawing or by working together in another way. Convenient sensory cards can also be made by photographing the children's eyes, ears, noses, and mouths. Especially for small children, using sensory cards helps them remember which sense is being used at a particular time.

### 3.2 Sense fairies

At the Taikalamppu daycare centre in Jyväskylä, children are guided by the sense fairies Aromii, Odorii, Okulii, Ororii, and Sensorii. The figures come from Hanneli Huovi's story *Viisi pikkuista Haltijaa* [Five Little Fairies], in which each sense has its own fairy and each fairy has the corresponding skills and information. Fairy Aromii is a gourmet, Odorii releases and conjures up odours, Okulii lives through his eyes, to Ororii the whole world is music, and Sensorii explores the world with his sensitive hands.

With the story, the children are able to concentrate on one sense at a time through the tales of the five sense fairies. Puppets acted as the fairies, whose task was to guide the children to use a particular sense to become familiar with and study food substances.



Figure 3.3.1. Sapere, the detective dog, marvels at the origin of the mushroom found in the forest with the children about and studies curiously the small details found on the mushroom using a magnifying glass.



Figure 3.4.1. There happened to be a birthday on the same day.

### 3.3 Sapere, the investigating detective dog

In the Pohjanlampi and Kotipesä daycare centres, the children were led into the world of the senses by Sapere, the detective dog, who studies, suspects, and seeks out phenomena belonging to the world of food and gives new hints, tasks, and questions. The dog marveled with the children at the upcoming things and questioned the children or adults about their observations. The Sapere adventure started as a play created by the personnel themselves, the plot of which went as follows: the dog Sapere lived in Paris and knew Mr. Puisais's marvelous studies. The dog Sapere's puppies were not very good at eating, and the dog brought the puppies to the daycare centre from time to time to taste new foods. Each group of children had its own puppy (puppet) that went with the children on adventures to the world of food with the aid of the senses.

### 3.4 Own birthday cake

The Pupuhuhta daycare centre is a multicultural environment, and during the Sapere project, one third of the children were immigrants. A multicultural food tradition was part of the daycare centre's everyday life, and this enriched the activities and planning of the Sapere project in many ways (see Chapter 10). Games connected with world of food, both outdoors and indoors, rose to a central role, and the children's enthusiasm also challenged the adults to be involved in the construction of the game and the acquisition of the materials (see Chapter 5). They wanted to recognise each daycare child as an individual, and the preparation of a birthday cake for each one became an important event. The child chose the filling for the cake and decorated it as he desired. The filled cake was admired and tasted by the party guests, who guessed and examined what the cake contained together.

## Activity example

### Rye crisp bread for all senses

It is possible to become familiar with all five senses with the aid of one particular food. In the following example, a regular rye crisp bread is subjected to study.

#### Sense of sight

- Why do we have eyes? Which sense do we need for seeing?
- What information do you get of this rye crisp bread with the aid of the sense of sight? What happens to it when it is split?
- “It’s brown, flat, coarse, and there are holes in it. It breaks and crumbles. Dirt like sand comes from it.”

#### Sense of feeling

- Which sense is needed so you can feel different things with your hands? What do you feel in your mouth?
- How does this rye crisp bread feel in your hand, in your mouth?
- “It’s hard, there are holes in it. It scrapes your throat. It’s lumpy, you have to put butter on it.”

#### Sense of smell

- Why do we have a nose?
- Which sense is needed so we can smell something?
- Close your eyes and smell the rye crisp bread. What does it smell like?
- “It smells like bread, soil. It smells good.”

#### Hearing

- Why do we have ears?
- Which sense is needed when we listen really closely?
- With eyes closed, hear what it sounds like when we eat rye crisp bread
- “It crackles, you hear a hard sound. Your ears seize up.”

#### Sense of taste

- Why do we have a mouth?
- Which is the sense by which we taste something?
- What does rye crisp bread taste like in your mouth?
- “It’s salty, dry. You need water. It tastes good, strong.”



## IDEA BOX

- My favourite food: what does it look like, how does it feel in the mouth, taste, smell, sound like
- Comparing raisins and rye crisp bread, using the sensory channels, an adult writes the results in a table (Appendix 4)
  - what does it look like and feel like?
  - what does it smell like?
  - how does it feel and what does it sound like when it breaks?
  - how does it feel in your mouth?
  - what does it taste like?

## 4. Preparation for the Sapere method

The following things connected with the safety and health of children are familiar from the everyday life of the daycare centres and are thoroughly thought over. The editors of this operating manual desire, however, to emphasise these important matters once more, so that familiarising children with the world of food will get a good and safe start.

### Allergies

In implementing the Sapere method, food substances are within reach of and accessible to children in a concrete manner, so it is important for adults to be aware of the allergies and other food restrictions of each child. It is also worthwhile to examine the children's reaction to food substances and discuss it immediately with the parents if reasons for concern arise.

### Hygiene

In the Sapere method, principles of daycare hygiene are taken into account, but not a special "hygiene passport" is required of the personnel. Before becoming familiar with and touching food substances, the children are guided, as in other daycare eating situations, to notice things connected with food preparation and food handling. Correct and proper hand washing, use of hair protectors and aprons, and discussion of where and how food substances and food are examined, handled and stored, create children's own "hygiene passport."

It is worthwhile discussing with children that even though food substances are touched during Sapere sessions and they are probed and examined with various tools, this does not mean that the children can act in the same way in other situations. The Sapere sessions are for examining, and meals are for actual eating and learning how to eat and the table manners are followed.



Figure 4.1 Hands washed, work can begin.





Figure 4.2. This is going quite well already after some practice.

## Safety

Many kinds of kitchen tools are used during Sapere sessions. With their aid, the children study, cut up, peel, prepare, and handle food in various ways. The task of the worker is to evaluate and choose tools (e.g. knives, machines) appropriate for the children's level of development. On the other hand, it should be noted that children can be taught the use of various kinds of kitchen tools from an early age under adult supervision. At the same time, they are told how and in what connection they are used and what dangers can occur when working with them.

Practice often makes perfect, and it is the task of the adult to choose tools that are not too sharp, heavy, or large, for example, for children to use. Food-preparation tools made for children are also available. However, the food-preparation situation

should be as ordinary as possible and it can also be implemented at home.

Experiences in the Sapere project showed that very small children can learn to use tools such as vegetable knives for cutting and chopping. The parents were surprised with the progress in the children's skills, how many things can be done with a small child in the kitchen, and how gladly they participate in food preparation.

Dangers sometimes appear when preparing food: hot plates and ovens, boiling water, and/or a baking sheet that has just been taken out of the oven. Under an adult's guidance, children learn to be careful and to predict what should be noticed in each situation. This is safety education based on experience, investigating and operational learning that can be shared and remembered in new situations too.



Figure 4.3. Sautéing onions after they've been peeled – many kinds of odours and other sensations. The stove burner is hot – and I stay at a suitable distance.

### Supplies and tools

No very complicated tools are needed at all for Sapere sessions. Almost all the basic tools needed for food preparation and eating can be found in daycare centres, such as:

- forks, knives, spoons, drinking glasses and cups (plastics ones are possible)
- saucers, serving dishes, bowls
- wooden forks, ladles, scrapers, whisks, shakers
- vegetable knives and paring knives (used according to the children's level of development and the size of the group)
- cutting boards
- kettles, oven sheets and pans
- vegetable brush, dishwashing brush
- greaseproof paper, waxed paper, household paper, plastic bags

Joy and variety in food preparation are achieved with special tools, such as melon baller, ice-cream scoop, juice press, etc. In addition, small machines running in the kitchen give their own additional flavour to the activities of small cooks. An electric mixer, eggbeater, blender, and food processor make a good effect, and require precision and concentration.



Figure 4.4. Boys and girls are interested in technology. It's also found in the wonderland of food preparation!

## Your own learning materials

It is easy for a daycare centre to make Sapere materials and study tools and materials with its own resources: fragrance bottles from small yoghurt tubs, eye patches from black felt, feeling boxes from shoe boxes, pictures of senses drawn by children and adults, pictures of food substances from magazines, memory playing cards, etc.

In addition, daycare centres already have a variety of materials for studying with the aid of the senses, such as partitions for hearing practices, cloth bags for feeling tasks, detective tools, loupes and magnifying glasses, a microscope, flashlights, and gardening tools for a vegetable patch.

Publications, pictures, announcements, booklets, games, and other materials can be obtained free of charge from companies that prepare and sell food. These companies, enterprises and commercial associations include:

- Maito ja Terveys ry [Milk and Health Association]
- Ruokatieto [Food Information]
- Leipätiedotus [Finnish Bread Information]
- Kotimaiset kasvikset ry [Finnish Horticultural Products Society]
- Valio Oy [Valio company] and dairy-industry enterprises
- nearby bakeries and shops
- plant farmers and individual producers
- companies and organisations:
  - Sydänliitto [Heart Association]
  - Osteoporoosiliitto [Osteoporosis Association] (including Luustoinen family materials)
  - Diabetesliitto [Diabetes Association]
  - MLL [Mannerheim Child Protection Association]
  - Nuori Suomi [Young Finland] (also materials connected with exercise, Vauhtivarpaat [children's exercise music])
  - Marttalitto [Martha (Home economics) Association]

The names and website addresses of some companies and organisations are available in Appendix no. 1.

During the nutrition project, the children's activities were recorded using digital and video cameras, and the results were later viewed together. This inspired the children to take on new food adventures, and the recordings gave the parents a good opportunity to follow and keep up with the children's activities. In this way, the new food adventures and the joy of learning were also transferred to the homes. The stored experiences were also collected in the children's "Growth Binders."

The Sapere sessions were recorded

- on tape (recording and listening to various kinds of sounds belonging to the world of food)
- with a dictating machine (recording children's comments and speech)
- with a digital camera (pictures of expressions, actions and the objects, joint trips)
- with a video camera (recording activities)

Everyone in the project was interested in making food with genuine tools and food substances. The children's favourite activities were:

- whipping with an electric beater
- grating, cutting, peeling, whisking
- studying with a magnifying glass
- detective tasks
- feeling food substances and using real food substances in games (e.g. rice, macaroni, dry peas in playing house, playing shop)
- outdoor games with real pots and pans, which can be obtained from parents and grandparents

There is much literature aimed at children about things connected with food and eating, many kinds of songs and games, stories and poems, with which Sapere sessions can be made varied and fun.

## 5. Sapere and play



5.1. Old pots and pans obtained from home found new users.

The Sapere nutrition-education method was previously applied mainly to instructional situations in comprehensive education. During the time of the project described in this toolbook, the importance of nutrition and food education was considered in the project's daycare centres. The workers experienced that play was one of the most central forms of examinations and experience, where children can play creatively also under adult guidance with things connected with the world of food. The Sapere method is already in itself a game through examining and experimenting, which children do for fun, not to learn. But, as the national early education curriculum guidelines also note, children learn by playing.



Figure 5.2. This is a rare treat.

During the project, people started to notice and facilitate play situations connected to the world of food. At the Pupuhuhta daycare centre, the Sapere studies started to live in the children's every games, both outdoors and indoors. Real pots and pans and tools were donated by the parents for the children to use in outdoor games. The children could collect natural materials from the yard of the daycare centre and from farther, too, from which many kinds of treats were shaped.

In indoor games, the children forged games together with adults, in which they sometimes used real food substances. On special play days, a shop, restaurant, or pastry shop could be forged. Depending on the possibilities, the game could also be enriched with real food: biscuits in the pastry shop, macaroni in the shop, juice and fruit in the restaurant. Sapere, the detective dog, brought play detective tools and his own plot lines into the games.



#### IDEA BOX

- Converting traditional group games: finding a voice in the watchdog game changes into a search based on smell, the poison mushroom game changes into an edible mushroom or sweet fruit game.
- The "What has changed?" game becomes the "What did you eat?" game (e.g. what did detective dog Sapere eat?)
- Looking for a pair according to the Water in the shoe game with real plants, food cards, etc.
- Picture evaluations, describing a picture.
- Fruit salad game: The children sit on chairs in a circle and they are appointed fruits: pear, apple, banana, pear, apple, banana, etc. One of the players is chosen to come to the middle of the circle. He remains without a chair, and he calls out "banana," for example, and all bananas change places; the one in the middle also tries to capture a chair, and the one who is left without a chair is the next caller. When the caller calls "fruit salad," all change places.
- Kim's game with materials and tools connected with the world of food.
- Guessing games based on the senses.
- Laboratory games: magnifying glasses, shape changes, smell phenomena, etc.
- Children's food factory: shop goods from food packages.
- Making play foods, fruits, and plants from papier-mâché, play dough, or felt, and playing with them.
- Orienteering game, according to signs connected with the world of food.
- Tastes, odours, and pictures connected with the Christmas calendar.

## 6. The early education environment



Figure 6.1. Harvesting potatoes from the daycare centre's garden

The children's daily activity and play environment can be constructed to support the children's nutritional and food education. In the following, we present examples of good practices in the growth environment of the project daycare centres.

Indoors, the children had:

- A convertible play kitchen
- A real "small kitchen" for Sapere activities, with correct heights
- A play cellar, in which there are, for example, root vegetables and vegetables made of papier-mâché
- A marketplace table
- Play dough ready for use
- Changing classification pictures on the wall: food circle (vegetables, root vegetables, grains, fruits, milk products, etc.); domestic and foreign foods
- Menus with pictures for the children to see
- Presentation of mathematical concepts with fruits, vegetables, and root vegetables.
- "Taste," "odour," "feel" of the week, with pictures on the wall.

- Odour cans (e.g. black plastic film cans) that can be opened, in which there are various odours, (e.g. spices)
- Photographs of Sapere activities, of children's expressions during smelling, tasting, and experimenting
- Pictures illustrating the senses: hearing, sight, smell, feeling, taste
- Pictures illustrating food
- Real food substances in bags (macaroni, rice, flour)
- Taste chart with pictures to be added (sweet, salty, sour, bitter)
- Herbs by the window, herb-growing
- Fish nets on the wall, fish trap on the ceiling, breads on rafters
- Picture books on food and eating

Outdoors, they had:

- A garden
- Real pots and pans for outdoor play (old kettles, pans, etc., were requested from the children's homes and from grandparents)
- Natural materials such as "food substances" for games
- Nearby forest, swamp, orchard

## 7. Sensory tasks for nutrition and food education

The sensory task examples in this chapter are connected with Sapere nutrition and food education and have been conducted in the project daycare centres with children in small groups, guided by adults. At the beginning of each section, there is a short information box about the sense in question. After this come the activity examples, supported by photographs taken during the project. Between the examples, experiences found to be good during the project are described. At the end of each sense section, there is an idea box, which contains other examples implemented during the project and new activity ideas that have come forward.

### 7.1 Sense of smell

“This is an exciting smell, something like the exhaust from a motorcycle” (blue cheese)

“This attacks the nose somehow” (white pepper)

“Smells wonderful, Mom puts this in desserts” (vanilla sugar)

We may get our first sensation of a food based on the sense of smell. When children enter the daycare centre, they smell that today there is the odour of freshly baked bread or meat and macaroni casserole. Smell sensations arouse strong feelings in us, and they may be connected with many kinds of memories or mental images. Children soon learn to associate certain odours with certain foods for celebrating Christmas, summer vacation, a certain person or place, and, for example, the family’s own celebrations. The sense of smell also serves as a warning signal and indicates, if the food is spoiled or burned.

During the Sapere project, the children mostly coupled smell experiences connected with food with its origin (this smells like vanilla, banana), if it was already known. Children described stranger sensations by seeking examples from very different experimental environments, as in the example above, where blue cheese brought to mind the exhaust from a motorcycle.



#### INFORMATION BOX

#### SENSE OF SMELL

The sense of smell transmits to a person information about the quality of the air he breathes and the food he eats. In the upper back part of each nostril, there is a smell epithelium a couple of square centimetres in size, in which there are millions of smell receptors, which are replaced every few weeks. A smell sensation arises when dissolved compounds attach to the mucous membrane of the smell epithelium through the respiratory air or the mouth and nasal pharynx. Smell sensations received through the respiratory air are called orthonasal smells, smells from food and drinks received through the nasal pharynx are called retronasal smells.

A human being is capable of distinguishing thousands of different smells and their strengths. We do not have a concept of basic smells, and often a person is only able to say whether a smell is pleasant or unpleasant, without giving a particular name to the smell sensation. Naming is essentially easier if optional choices are given together with the smell. The names most often describe the source of the smell (rose, lemon, perspiration). The sense of smell is considered to be adaptable. After we have been in a new smell environment for a few minutes, we no longer necessarily smell anything special. The sensitivity of the sense of smell is individual. It weakens as we get older, but there are great differences among people in this regard.

Odour is a neutral word that describes smell sensations. If the smell is pleasant, the word fragrance is often used. The odours of foods are often called aromas. When the odour of a food or a drink is perceived through the nasal pharynx while food is in the mouth (retronasal odour), we call the odour taste. For example, the taste of vanilla is really an odour.

Source: H. Tuorila, [K.] Parkkinen, and K. Tolonen: 2008. *Aistit ammattikäyttöön* [The Senses for Professional Use]; WSOY, Helsinki, H. Tuorila and U. Appelbye (eds.) 2006: *Elintarvikkeiden aistinvaraiset tutkimismenetelmät* [Sense-based Research Methods for Foods]. Yliopistopaino, Helsinki.

## Activity examples

### 1. Odours in a can

Supplies:

- Odour cans with lids (preferable opaque, e.g. black film cans)
- Various better known and easily identifiable spices and food substances (cinnamon, cardamom, coffee grounds, oregano, white onion, apple, banana)
- Note: It is worth avoiding strong spices, because of allergies
- Eye patches or scarfs

Place the spices/food substances in the cans and leave some on saucers for viewing and feeling. Discuss with the children which sense they intend to use. For example, a picture of a nose can be used as supplementary material. In addition, either pictures of the food or the actual food in which the food substance is used can be available.

cinnamon > biscuits

coffee powder > brewed coffee

oregano > pizza with oregano on top

white onion > bread onto which white onion has been ground

apple > apple jam

banana > banana yoghurt

The children smell various odours with eye patches on their eyes or with eyes closed and try to remember and guess where they may have encountered the odours before. Finally, the can is opened and what is found there is tested (senses of sight and feeling). Discuss the children's sensory experiences and, if necessary, present words that describe them.

### 2. Odour lotto

Supplies are the same as in the preceding example, but each odour is in two different cans. The children try to find correct pairs, based on smell. For younger children, only a few odours are given; older children can be given more. This example is also suitable as a group task.

### 3. Odour – picture pairs

Supplies:

Pictures of food substances to find and corresponding odours in jar.

e.g.:

- picture of an apple and a piece of apple in a jar
- picture of an onion and onion in a jar



Figure 7.1.1. Smells familiar. Covering the eyes is not necessary for little ones.



Figure 7.1.2. Where's the match for this one?

- picture of an orange and a piece of orange in a jar
- picture of dill and fresh dill in a jar

The children try to find matches for one another based on the aroma and the picture. The task can be made easier by showing a picture of the whole food substance, studying its aromas, and, if necessary, cutting it to bring the odour stimulation out.



## 4. My favourite aroma

Various aromas are presented:

- vanilla
- cocoa
- coffee
- oregano
- cinnamon
- orange

The children choose their favourite aromas by smelling them. When older children are involved, the aromas can be placed in order of preference and compared according to the children's own preferences.



### IDEA BOX

- With eyes closed (or blindfolded), smell and try to guess, e.g. a whole apple, orange, lemon, etc.
- Odour scarf → idea for a small group of children: a mother brings her own scarf to the daycare centre for the children to use, e.g. as an oven cloth; the mother's "odour" in it brings safety (observed to be good).
- Lemon thief game: One child is a detective and goes to another room. During that time, a lemon is rubbed on the hands of a few children. Then Detective Sapere is called in, and he tries to find out who has been secretly stealing lemons from the garden by smelling the children's hands.



### INFORMATION BOX

## SENSE OF SIGHT

The sense of sight is the ability of the eye to receive a certain portion of electromagnetic radiation. The lens system of the eye, which resembles that of a camera, activates the cells of the sense of sight, from which impulses go along the optic nerve to be interpreted by the brain. The brain interprets the messages based on previous experiences.

A human receives most of his sensations through the sense of sight, so visual observations of food and food situations are important. Appearance is the first target of evaluation, when it is decided whether the food is tasty or edible at all. Certain colours have become associated with certain aromas. This association is so strong, that a person can be led to perceive some aromas "misleadingly," based on the colour.

In addition to colour, there are many other important characteristics of appearances that predict different sensations. For example, the size and shape of fruits and vegetables and the fluidity and thickness of drinks give hints about the quality of the food.

Source: H. Tuorila, [K.] Parkkinen, and K. Tolonen: 2008. *Aistit ammattikäyttöön*; WSOY, Helsinki, H. Tuorila and U. Appelbye (eds.) 2006: *Elintarvikkeiden aistinvaraiset tutkimismenetelmät*. Yliopistopaino, Helsinki.

## 7.2 Sense of sight

"Soft, white and green, looks just like a ghost" (blue cheese)

"White, smooth, bubbles, looks like white water" (milk)

"Just like it has fallen from a tree and been run over by a car" (overripe banana)

With the aid of the sense of sight, we receive information about the appearance, shape, form, colour, size, and movement of food and about how, e.g. the cooking process affects the appearance of the form of the food.

Questions about the appearance of food arose continually through the learning by examining in the Sapere project. What colour are these berries? What colour juice comes from them? Does a food of some colour have a different taste? What is the broth of meat soup like, what is the broth of fish soup like when cooked with milk? Does the colour of a carrot change when it is ripened by cooking? In which drinks do you see bubbles? What does an egg change into when it is whipped? The form of butter changes when it melts in a pan, what about ice cream?

The language is rich in descriptions of visual sensations received from food; food can be red, transparent, bubbly, runny, look hard, lumpy, round, long, mouldy, rough, uneven, crumbly, etc. Food presentation, setting and decorating the table, flowers on the table, for example, bring their own addition to the visual sensation connected with food. The sense of sight has central importance in the aesthetic experience of food.



Figure 7.2.1. This scene would have been viewed even longer. The settings of the harvest festival looked so delicious that eating the tasty bits almost overtook the main course. The consumption of root vegetables and green vegetables exceeded all expectations, and the matron had to hurry to chop up additional vegetables on the table.

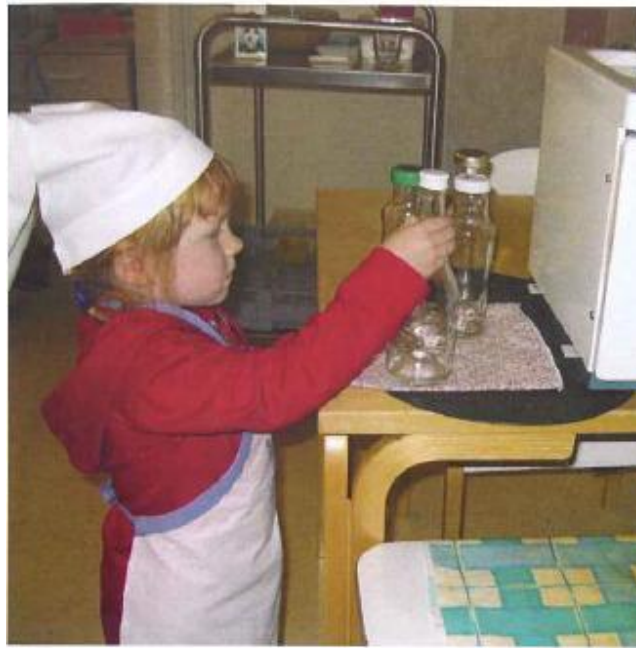


Figure 7.2.2 Worker in a juice factory

## Activity examples

### 1. Colour world of the harvest festival

When autumn came, a colourful harvest festival was celebrated in daycare centres. Root vegetables, other vegetables, berries, fruits, and grains, were placed in the corridors and gym room of the daycare centre, whole and cut up. During the day, the children were divided into small groups to become familiar with the foods on display and taste bits of them. The matron had baked bread. When lunch started, the children went to put the vegetable portions they wanted on their own plates, along with dipping sauce. During the week, the children painted their favourite fruits and vegetables and experienced with painting arrangements. Parents also brought things to be tasted at the harvest table.

### 2. Raw, ripe, and overripe banana

Green, yellow, and brown bananas are studied. Discuss what they look like (colour, shape, peel). Remind them of previous experiences with bananas, what they taste like, where they were obtained. Consider what these bananas of different colours could

taste like. Let's see what is found underneath the peel. Taste what the different bananas taste like; why? Choose which colour banana each one prefers to eat.

### 3. Making juice

#### Supplies

- juice steamer
- bucketful of black currants, sugar
- washed bottles, heated in an oven, rubber stoppers

Black currants were obtained for the daycare centres on a marketplace trip. For safety reasons, there were only a couple of children present at a time when the juice was being made. During the steaming, the children examined what colour juice came out of the berries and what the berries looked like before and after the process. The colour of the juice after it was bottled was examined. Then it was diluted, and the dilutions were tasted, and the change in the colour of the juice was examined. The children were able to experience themselves what a pleasant and suitable dilution was. It was also discussed what would happen if the juice were added to yoghurt, ice cream, another juice, cereal, etc.



7.2.3. Daycare children found colours by mixing “vegetable colours,” which they compared to the colours of real vegetables and root vegetables.

#### 4. Colours of vegetables

Colourful vegetables give possibilities for many types of artistic expressions. The colours of vegetables can be found by mixing water colours or dissolving crepe papers of different colours (e.g. blue and yellow) in water. At the same time, new colours that can be obtained from basic colours are learned.



#### IDEA BOX

- Which root vegetable can you find? Photograph orienteering (outdoors or indoors)
  - pictures of the yard (or interior) of the daycare centre, either larger clear objects or detailed pictures
  - real vegetables or pictures of them have been hidden in these places
  - the children have a card with pictures of the particular vegetables
  - the children orienteer on the basis of the target picture and tick boxes by the pictures of the vegetables they find
  - older children can have several pictures and younger ones only a few
- Close-up pictures of grapefruit, tomato, apple, squash, tree bark, flower petals
  - try to guess from the picture what it is
  - for smaller children, the task can be made easier by presenting the picture and the real object at the same time and asking them to find the object shown in the picture
- Examining foodstuffs and raw materials with a magnifying glass or microscope



## INFORMATION BOX

### SENSE OF FEELING

There are receptors that transmit sensations of feeling in various parts of the body. Different types of receptors react to different feeling sensations, among others touching, temperature, and pain. The sense of feeling also tells us about the movements and position of our body. The sense of feeling in the mouth cavity, which is often called mouthfeel, is an important transmitter of sensations connected with food. Lips and the front part of the mouth are areas that are sensitive to temperature.

The nerve endings of the mucous membranes of the nose and mouth also receive chemical stimulations, in which case we speak of chemosensation. Chemical compounds can be sensed as burning, pricking, numbing, or even painful. Of food substances, e.g. chili, mustard, and vinegar cause a chemosensation response. The chemosensations caused by spices are an important part of the food's "taste."

Due to the variety of the sense of feeling, it is considered to represent several senses. All other sensations that do not represent sensations of tasting, sight, hearing, smelling, and balance are also classified as feeling sensations.

Source: H. Tuorila, [K.] Parkkinen, and K. Tolonen: 2008. *Aistit ammattikäyttöön*; WSOY, Helsinki, H. Tuorila and U. Appelbye (eds.) 2006: *Elintarvikkeiden aistinvaraiset tutkimismenetelmät*. Yliopistopaino, Helsinki.

### 7.3 Sense of feeling

"Soft and smooth, feels like it slides, lovely, wet. (rasberry yoghurt)

"Feels very much like "lälli" [meaning unknown], like the feathers of a pillow." (potato flour)

At Sapere sessions, when studying food substances with the aid of the sense of feeling, the children noticed how food could feel different in their hands and mouth: it was warm, cold, burning, ice-cold, stinging, tickling, lumpy, hard, sticky, loose, thick, soft, rough, dry, creepy, hurting, slippery, etc. It was noticed that some foods were preferably eaten cooked and warm and others tasted better fresh and cold. A good example of the latter is carrot, which to many tasted best when fresh.

Children have a natural need to feel their environment with their mouths, hands, and feet. During Sapere sessions, we emphasised that the children had permission to touch and feel the food substances presented with their hands, and they were guided to notice their own mouthfeels. When the project started, it was considered whether the method would affect the children's ways of eating and whether they would give the children contradictory messages about how food substances should be handled in general. The Sapere sessions were held separately in "examination situations" reserved for them, and doubts about whether the children would start to eat with just their fingers or otherwise play with their food during eating situations turned out to be unfounded. During the Sapere project, the workers noticed that especially small children ate vegetables better if they were permitted to take small pieces from their saucers with the fingers during eating situations.

## Activity examples

### 1. Flours in cans

In three opaque cans, there are different kinds of powders: potato flour, breadcrumbs, and wheat flour. The children test each flour with their hands and tell what they feel like. At the end, they see what the different flours look like and taste each flour separately (tastings are in separate containers and are not touched).

### 2. Guessing circle

Supplies: hard-boiled eggs, whole fresh carrot, rye crisp bread.

The children sit in a circle and pass one food at a time behind their backs, giving it to the next person each time. After each child has felt a particular food, they finally try to guess what it is. They describe what it feels like in their hands.

### 3. Exotic fruits

Supplies

- whole exotic fruits, e.g.: kiwi, pineapple, mango, grapes, star fruit, banana, litchi
- fruits that are already cut up on display
- knives
- blindfolds
- saucers, glass dessert bowls

The blindfolded children feel the fruit with their hands and describe what they feel. They note the shape, size, surface, weight, etc., of the fruit, and the feelings expressed by the children are discussed. Finally, the blindfolds are removed and the colours and forms of the fruits are viewed. The fruits are cut up (one whole fruit is left as a reminder of what it looked like as a whole), and the cut pieces were tasted while discussing their tastes and how they felt in the mouth (mouthfeel).

Making use of the sense of hearing, they listen to the sound of the fruits being eaten make in the mouth, whether a sound is heard when cutting, and whether a sound is heard when touching. More fruits are cut up, and bits are placed on saucers. Each child can make a fruit salad of their own choice in their own bowls.

Exotic fruits are also found dried, and by tasting and studying them, the different ways in which the fruit changes when dried can be observed.



7.3.1. In becoming familiar with exotic fruits, the children assembled fruit salads for themselves.

## 4. Baking

Supplies:

- ingredients for bun dough
- bowls
- transparent measuring cups
- baking sheets, baking paper
- food processor; sometimes the dough can be made with a food processor, in which case sound effects are obtained, and children interested in technology can follow how the dough behaves in the machine.

The baking situation gave many possibilities for the children's sense of feeling. Before starting to bake, the children felt the flour, sugar, yeast, salt, fat or oil, spices (e.g. cardamom, cinnamon, vanillin sugar) with their hands. They became familiar with eggs by breaking an egg (sense of sound) and experiencing what eggshells, yolks, and whites feel and look like. They were able to taste the substances used in baking and describe how they tasted and felt in their mouths.

The ingredients were measured into transparent bowls, and they studied what the quantities looked like in the containers. The dough was prepared according to instructions. The children took turns kneading the dough and sometimes, when needed (baking was common) the dough was finished in a food processor (sense of sound).

## 5. Grating root vegetables

Carrots, swedes, turnips, and other root vegetables were grated several times. The children were able to eat the vegetables they had grated with their hands, and they did that a lot, more so than during meal times, in the opinion of the workers. Swede and turnip were not known to many of them as whole vegetables. When they became familiar with them as wholes, pieces, and grated (doing the grating themselves), their mental image of the vegetables and their different forms became more varied.

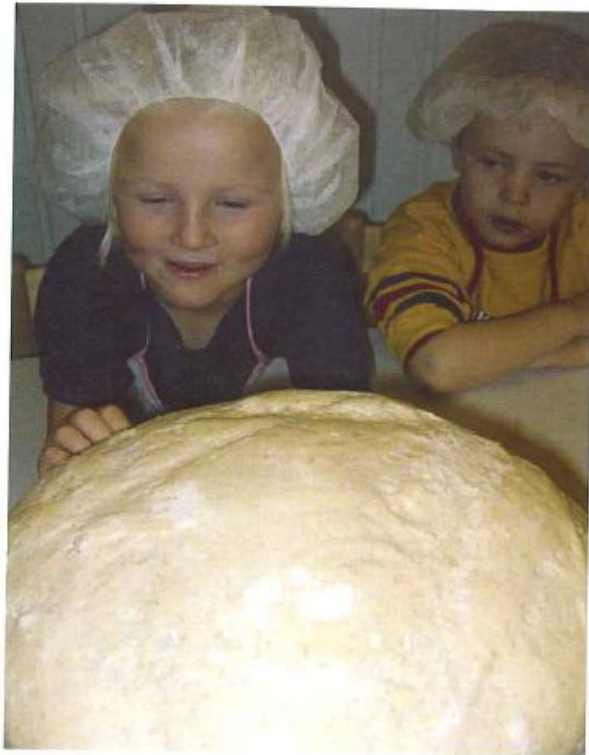


Figure 7.3.2. The rise of the bread dough was monitored, and at the same time, it was noticed how yeast affects the dough. Each child shaped his own bun and decorated it with raisins. The name of the child was marked on baking paper, so that each one later got to eat the bun he had made. The buns were baked and enjoyed cold with milk. A wonderful fresh and warm sensory feeling!



Figure 7.3.3. Feels wet!

## 6. Feeling boxes or bags

Supplies:

- empty box (e.g. shoe box) with a hole in the lid through which a child’s hand will fit.
- cloth bag
- carrot, apple, rhubarb, banana, potato, lettuce leaf, etc., or
- flours, sugar, macaroni, nuts, rice, peas

In each box or bag contained one root vegetable, which the children felt with their hands, and they described its shape, surface, hardness, and softness. They tried to guess which root or other vegetable it was. If necessary, help could be obtained with the aid of pictures, and finally, they saw what the box contained.



### IDEA BOX

- Feeling exercises with Detective Sapere: With eyes covered or, e.g. with a partition or cloth to block the view, feel with your hands what foodstuffs are hidden in a secret dark cellar.
- With eyes closed or covered, feel various objects needed for food preparation.
- Feeling lotto: the same food substance (macaroni, rice, flour, flakes) is placed in two different dishes. The food items are paired. The child looks for the pairs by feeling (the dishes can be covered, e.g. by several disposable hair protectors, one on top of another, that has a hole through which the child can push his hand into the container).
- Washing the dishes gives many kinds of feeling sensations.
- Washing root vegetables and vegetables and feeling them when dry/wet, peeling them by hand or with a knife.

## 7.4 Sense of hearing

“My whole head hears it.” (chewing a carrot)

“Rye crisp bread grumbles.”

“Milk splashes in your mouth.”

In food preparation and in connection with eating, children hear very different sounds around them: cutting, whipping, the whirring of an eggbeater, the clicking of plates, and the opening of a refrigerator door. Sounds are also perceived in connection with gathering or buying food: berries hitting the bottom of the bucket, the sound of a hoe when it hits the ground when digging potatoes, a milking machine hums and a bar-code reader beeps, resembling a trip to the shop. With experience, a child starts to make decisions about the world of food based on sensory observations: sounds from setting the table are signs that he will soon be eating, and the hum of a food processor tells him that bun dough is being made in the kitchen. In Sapere examinations, the “technical” kitchen sounds belonging to the food world, such as brewing coffee, a microwave oven, boiling water, and water taps are of special interest to boys, who guess which machine is really involved.



### INFORMATION BOX

#### SENSE OF HEARING

With the aid of his sense of hearing, a human being orients himself in his environment and receives information about things happening around him. The sense of hearing registers various sounds, sorts the pitch and strength of sounds, and helps in locating what is the source of the sounds and from what direction they are coming from. A person's outer ear collects sound waves from the environment. These waves are conducted through the eardrum and middle ear to the cochlea. From there, hearing sensations are transmitted through the brain stem and the thalamus to the hearing cortex located in the temporal lobe. The grating of food substances, the bubbling of liquids, and the boiling of water can be perceived with the aid of the sense of hearing.

Source: H. Tuorila, [K.] Parkkinen, and K. Tolonen: 2008. *Aistit ammattikäyttöön*; WSOY, Helsinki, H. Tuorila and U. Appelbye (eds.) 2006: *Elintarvikkeiden aistinvaraiset tutkimismenetelmät*. Yliopistopaino, Helsinki.

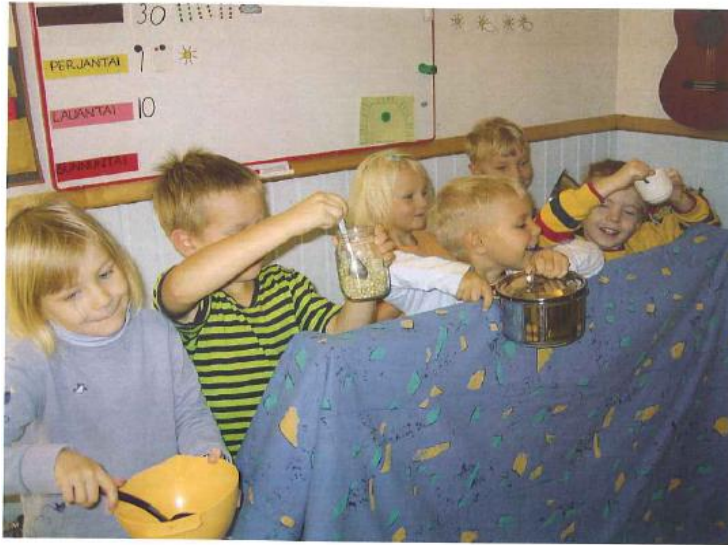


Figure 7.4.1.  
The Sapere orchestra ...  
It played to the children from behind  
the partition ...  
The Sapere orchestra ...  
It made the children guess ...

## Activity examples

### 1. Noise from the kitchen

Adults made sounds belonging to food preparation, e.g. grating carrots, whipping, closing and opening the refrigerator door, the grinding of a pepper mill, pouring water, and the hum of the coffeemaker. The sounds were discussed with the children, and at the same time, they tried to identify, by hearing, which sound it was. If guessing became difficult, it was made easier by showing a hint of how the sound was achieved (e.g. grating a carrot). Sometimes, sounds were produced genuinely from behind a partition. The advantage of this was that the children got to participate in producing the sounds.

### 2. Sound lotto or sound memory game

Supplies: 6-10 package boxes of the same size; in every two there are the same food substances (macaroni, rice, breakfast cereal, bread crumbs, hard-boiled egg, water, ice cubes, etc.).

The package boxes are searched by shaking and listening to the sound pairs, at the same time trying to guess what is inside each box.

A sound memory game can also be created with cans: the cans are placed on a table, and the children search them by shaking cans and finding the ones with the same sounds. Finally, the cans are inspected to see whether the choices were correct.

### 3. The pot calls the kettle black

A rhythm orchestra was assembled from kettles, lids, eating tools, whisks, chopsticks, wooden ladles, etc. The instruments were:

- the sound of a ladle or whisk in a metal cup
- the gurgling of water when it is poured from a can into a dish
- pouring rice/macaroni/dry peas into a cup or shaking them in a can
- shaking peas or rice in a can (maraca)
- instruments made of African fruits



#### IDEA BOX

- Sound lotto: one person makes a sound behind a partition and another tries to make the same sound on the other side (such as pouring macaroni/rice, peas into a steel container, pouring water, clashing kettle lids together)
- The children themselves make sounds of the world of food
- A task path can be made for a family evening, when children and parents can go around the path together
- Ready-made recordings can be found in libraries
- Rhythm and music performed with instruments made from dried fruits (sold, e.g. by development aid shops or Maailmankaupat [World Shops])



## 7.5. Sense of taste

“The test kitchen with lemon was a bit feisty.”

During the Sapere project, the basic taste umami was not yet very well known to the project workers, so it was not included in the teaching of basic tastes. The taste of foods was, however, generally the first sensation about which the children started to talk when becoming familiar with a food. In small groups, the children learned to identify the other four basic tastes and to name and search for them. They started to taste bitter and sour tastes more boldly after several experiments, and their strengths and changes were tested by combining them with one another, such as enriching the (bitter) taste of cranberry with powdered sugar. Decorations for a Christmas dessert were made from cranberries decorated with powdered sugar. The appearance and colour of food affected the children’s desire to taste the food substance. The workers dyed “viili”, curdled milk, with different food colourings, and these viili mixtures with different appearances were tasted together. In reality, there were no differences, but the children said that viili of a particular colour was more pleasing. Red viili, for example, was liked better than green viili, for example.



## INFORMATION BOX

### SENSE OF TASTE

Tastes are sensed through taste buds located in the taste bud area of the tongue. There are sensory cells in the taste buds, to which the chemical compounds that give taste bind themselves. According to the current classification, we taste five different basic tastes: sour (lemon, sour crisps), bitter (coffee drink, grapefruit), sweet (honey, sugar), salty (pickles, potato crisps), and umami (meat taste, sodium glutamate).

Most people recognise the sweet taste already from childhood. The salty taste is also learned to be identified early. Sour and bitter tastes are confused more easily, but with a little exercise, it is easy to learn to separate them from each other. Umami, which is fairly new as a taste concept, requires teaching to identify. Tasting sweet and salty would appear to be preserved with aging better than tasting sour and bitter, but overall, the sense of taste does not suffer as much as the sense of smell.

Source: H. Tuorila, [K.] Parkkinen, and K. Tolonen: 2008. *Aistit ammattikäyttöön*; WSOY, Helsinki, H. Tuorila and U. Appelbye (eds.) 2006: *Elintarvikkeiden aistinvaraiset tutkimismenetelmät*. Yliopistopaino, Helsinki.

Figure 7.5.1. A cranberry in the mouth ...



## Activity examples

### 1. Enthusiastic preparer of grated swede salad

In the children's club, they became familiar with root vegetables, other vegetables, and fruits that were picked up from the Heikki Hiiri [Heikki Mouse] cellar (built from a cardboard box into a corner of the clubroom). A child who had never eaten grated salads grated a swede with concentration and enthusiasm, tasted the gratings with his fingers, and then grated more. The swede surely was tasty, the club leaders noted, but in their hurry to leave, an important experience was left unreported to the parents. The parents wondered afterwards where their children had received enthusiasm to taste swede, when the child wanted to buy a swede on their shopping trip. The matter was investigated, and after that, swede was on the family's shopping list along with other root vegetables requiring grating.

### 2. Taste school

Sweet tastes: sugar, honey, pudding, chocolate, sweet apple, carrot

Salty tastes: salt, pickle, ham, potato crisp

Sour tastes: lemon, sour milk/unflavoured yoghurt, sour apple

Bitter: real cocoa powder mixed with water into a dough (1:1)

The children became familiar with the basic tastes by tasting and classifying them. Tastes were named and discussed. The mouth was rinsed with water after each taste cycle.

### 3. Quark tastes: sweet or sour

- 2 quark mixtures, one with raspberry jam and the other with sugar > 2 sweet quark mixtures
- 2 quark mixtures, one mixed with crushed lingonberries and the other unflavoured > sour mixture
- blindfolds
- small dishes, spoons

Adults had prepared the quark mixtures. Working in pairs, the children tasted mixtures with different tastes with each other, blindfolded, and the blindfolded person tried to describe his taste sensations. At the same time, the difference between sweet and sour in the taste sensations were searched. Finally, they got to see how each taste mixture looked like in colour and composition. The children did the same test with their parents (see chapter 10). The adults could make notes of the children's comments, which could be studied together with the parents when they picked the children up from the daycare centre.

### 4. Are you a friend of sweet or sour? (example from the book Swedish book *Mat för alla sinnen*)

The children are given two kinds of apples to taste: 1. green, harder apple (sour) and 2. softer yellow apple variety (sweet). After this, the children can choose their favourite taste. The children who chose the green apple liked the sour taste. Those who chose the yellow apple liked the sweet taste more. It is then interesting to follow whether the children also like sour and sweet foods in new taste tests.

### 5. Sweeter or saltier (example from the book *Mat för all sinnen*)

Sweet mixtures:

- "viili" curdled milk mixed with banana
- "viili" flavoured with sugar (sweeter than the one flavoured with banana)

Salty options:

- lightly salted potato crisp
- strongly salted potato crisp

The children test two strengths in both sweet and salt tastings. They taste them and see how they feel in the mouth. They discuss which feels more pleasant as a taste, noting that it's not worth arguing about taste experiences, as everyone has his own preferences.

## 6. Sapere dog's juice jugs get mixed up

### Supplies:

- rhubarb and blackcurrant juice, apple juice, orange juice
- fresh rhubarb stalks, blackcurrants, apples, oranges (if available)
- transparent drinking glasses
- transparent jugs

The children are told that Sapere dog's juice jugs have got mixed up and now the dog doesn't know which juice is which. Juice is poured into the drinking glasses and the children are asked whether they recognise the juices they drink. They are tasted and smelled. The colours are studied, and either foods that were used in the juice or pictures of them are presented. By examining and tasting (if the raw materials of the juices are available), the juices and the berries/fruits are matched together.



### IDEA BOX

- Comparing raisin and sour crisp using all sense channels; an adult writes the results in a table (Appendix 5)
  - how do they look and feel?
  - how do they smell?
  - how do they feel and sound when bitten?
  - how do they feel in your mouth?
  - what do they taste like?
- Blindfolded children taste and tell what a thing tastes like and try to guess what it is.
  - is it sweet, bitter, salty, or sour?
  - what is this familiar taste (strawberry, banana, vanilla)
- taste tests: e.g. sugar-free juice, sweetened but undiluted juice, and finally diluted juice (the children can dilute it themselves)
- viili/yoghurt is dyed with different caramel colourings. It is first guessed what they taste like and then they are tasted. Are some colours better than the others? Does the colour of the food affect choice?
- which bread tastes best alone, spread with butter, with cheese, grilled with garlic, etc.
- which one does not belong to the group: the children are brought various fruits for fruit salad and also other foods that are not used in fruit salad (onion, carrot, swede, potato). The children are asked to examine and consider together which are the "wrong" food substances.

## 8. Trips and theme weeks

The Sapere method inspires and encourages both children and adults to become familiar with and go to the sources of food. A trip to gather lingonberries was very popular during the Sapere project. If lingonberries are not found in the forest or the forest is too far away, they can visit the marketplace to buy some. Next to the marketplace, a shop can be found, and from the shop, a fish counter can be found. Possibilities for trips will surely be found, whether the daycare centre is in a city, a small town, or a rural area.

During the project, forest trips were found especially versatile also from the viewpoint of the world of food.

A familiar forest showed the ripening of its products with the changes of season: in spring or very early summer, the children went to see the flowering of blueberries and lingonberries, in the fall they were gathered into small containers. When the autumn came, mushrooms were sought and identified.

The children talked about trips to farms for a long time. The milk's journey from the cowshed to the dairy and from there to the shop was clarified, at least to some extent, when the children saw cows being milked and the lady of the farm told them what happens next. Domestic animals were interesting and aroused feelings of care, and entertained and inspired the children for future games.

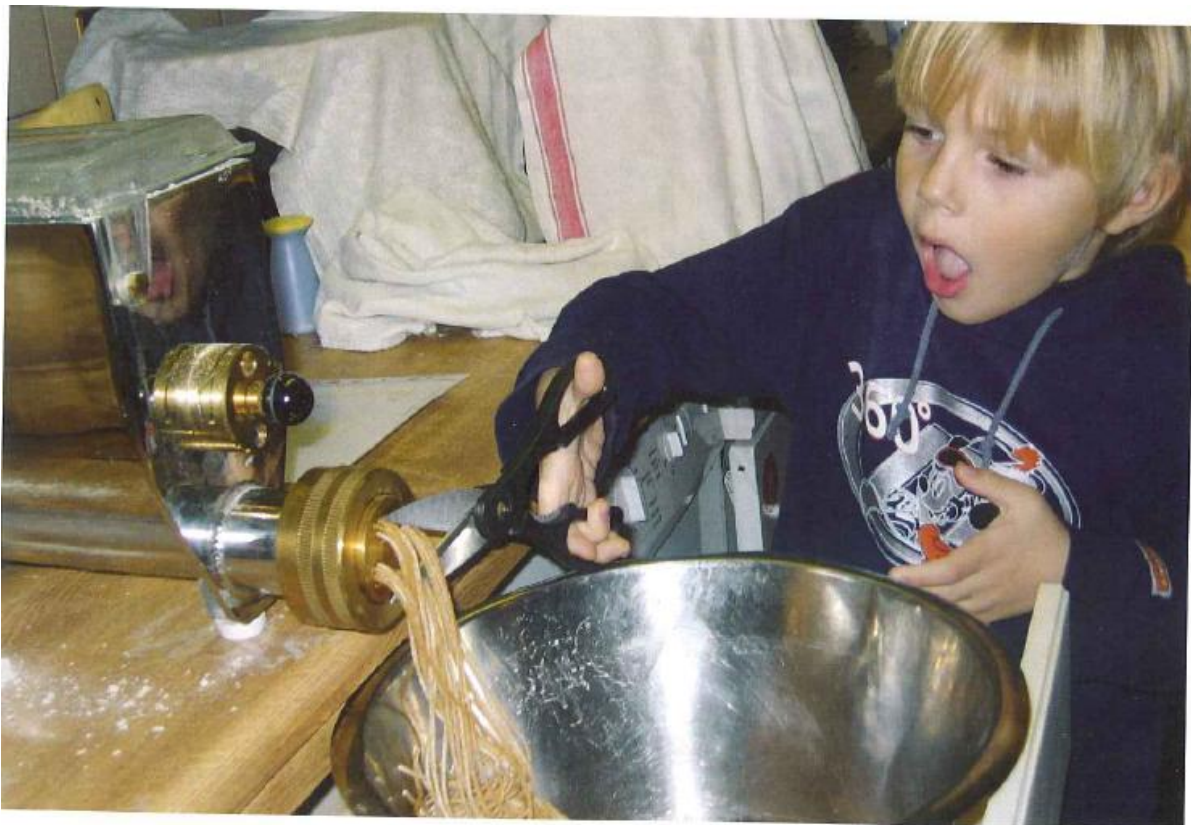


Figure 8.1 One farm specialised in processing grains, and the children were able to make spaghetti themselves, which was also eaten on site.

## Activity examples

### 1. Shopping trip to a corner shop

Sometimes, food substances were obtained from a corner shop with the children. The children were given a shopping list: pictures of what was needed and quantities describing them (e.g. three bananas). Then they went together to study what was found in the shop. A new idea came forward that the children could make the shopping list themselves by drawing and marking the quantities needed in any way they know how, guided by an adult. The supplies for the shopping list are found in the recipes, which can be studied together with the children.

### 2. Family trips

On family trips, experiences were obtained for the whole family: being together, exercising, being outdoors, eating together (which by the way is an incredibly pleasant thing), becoming familiar, being close to nature, etc. Trips interested families, and it's easy to make trips and participate in them when you could take the whole family along!



Figure 8.2 When the children had their own tasks on shopping trips, they didn't often suggest purchases in front of the sweets shelf. If the subject came up, a negative purchase decision was sufficient, with the reason that we've already bought all the goods on the cards. Parents also used this trick successfully.



Figure 8.3. Eggs, pieces of swede, and organic sausage were roasted around a campfire. There were adventures along the sensory path with various tasks.



Figure 8.4. Is there anything to eat in these?

### 3. Theme weeks

Various theme weeks were held in the daycare centres. The children studied how many different kinds of things to eat can be obtained from particular raw materials (grains, vegetables, etc.). Trips and family or parent evenings could be added to the programme of theme weeks.

#### Milk week and cheese making

- tasting various kinds of cheeses, “viilis” (curdled milk), and milks, making and tasting milkshakes.

#### Fish week

- fish trip to a market hall
- smoking fish outdoors
- cleaning and examining a fish
- frying vendace
- ice fishing trip to Lake Päijänne; the guide was a local fisherman

#### Bread and grain week

- grain exhibit connected with it
- refined products made from each grain next to it (oats > oat flakes > oatmeal)
- baking (various breads, buns, bun loafs)
- old objects and tools connected with baking

#### Harvest festival

- exhibit of greens and other vegetables and berry exhibit
- tasting event

#### Growing sprouts

- Growing sprouts and alfalfa

## 9. Sapere challenges children to learn other skills



Figure 9.1 Doing things together, experiencing things together

The Sapere sensory method also takes note of other learning areas of children. It challenges the children to develop their skills, especially linguistic skills. Discussing sensory observations with a child and the whole group and an adult encouraging to seek words to describe their experiences increase the child's vocabulary. The Sapere world is connected with innumerable adjectives, and children come up with more of them all the time. In the vocabulary of children, a taste experience is described easily with two words, good or bad. Giving variety to expressing opinions can be guided by giving prepared examples: I don't like this, because it tastes sour/bitter, is too sweet, salty, etc. At the end of this manual, as an aid to Sapere sessions, there is a list of adjectives that describe various sensory experiences (Appendix 3).

The Sapere method teaches thinking skills in tasks connected with exploring and making observations and decisions. Why did the cooking water of beets turn red? What happens to butter when it is heated in a pan? Asking questions connected with exploring and observing the world of food is described with examples in Appendix 2.

Working in small groups and examining things together develop children's social skills. During the project, the children enjoyed it, for example, when they were able to describe their experiences together and hear how others told about their sensory observations. Their interest in and curiosity about the experiences of others was genuine and awakened many fun story sessions. Various sensory experiments taught the children to notice that all opinions are equally correct and important. The motto was, in fact, that "Matters of taste are not argued about, but discussed."

On berry trips, gathering into a common container achieved a collective feeling of success, of which the children were proud together. With the Sapere method, positive influences were also noticed on the development of self-esteem, when a child received experiences of success and was able to enjoy learning something new.

The fine motor skills of children were trained in a varied way during Sapere work. Chopping, pouring juice into a bottle, using an electric beater, feeling, etc. required precision and concentration.

Mathematical skills were learned, for example, by measuring food substances, weighing quantities on scales, heating the oven, studying the temperatures of food substances, and counting fruit according to a recipe for fruit salad. Measurement methods used in food preparation became familiar to children as they worked. Transparent measuring containers were handy, because then the child could better follow and see, e.g. what a litre of water looked like in the container. Number concepts, comparison, quantities, etc., came up continuously.

### Activity example

#### Cookbook made by the children themselves

A cookbook was made together with the children, in which the phases of making the prepared dishes and the recipes were preserved. The preparation phases were

recorded (by photography, drawing) as they were being done. Also pictured were the food substances and supplies needed for the preparation and the children preparing the food.

In the following example of preparing lingonberry porridge, the children were challenged to experiment with and practise together almost all of the skills mentioned above. The recipe, which went into the cookbook, and its preparation phases were captured with a digital camera.

The preparation path for lingonberry porridge with the different skills needed was as long as the Great Wall of China.

- sporty ( the children collected the lingonberries themselves from a nearby forest)
- mathematical skills (food substances were measured)
- linguistic (the recipe was written on paper, and the letters were studied)
- social (including gathering lingonberries together, preparing the porridge in a small group)
- decision-making ability and problem solving (when are lingonberries soft?)



Figure 9.2. The lingonberries had to be cleaned, of course.





MEASURE 1 L WATER  
3 DL LINGONBERRIES

COOK THE LINGONBERRIES  
UNTIL SOFT

Figure 9.3. This is how lingonberry porridge is made ...

### Preparing whipped porridge from lingonberries

#### Supplies:

- pots, sieve, electric beater, measurement containers
- 1 litre water, 20 decilitres lingonberries, 2 decilitres semolina
- digital camera for recording
- book-making materials (e.g. folder, cardboard, etc.)

The children were told which food was going to be prepared, they became familiar with the tools and food substances, and the preparation phases were reviewed. The work was started and the following pages came into the recipe with photographs:

1. Measure 1 l water and 3 dl lingonberries (picture in which a child shows the amount measured)
2. Cook the lingonberries until soft (picture of lingonberries cooking in a pot)
3. Strain the berries (picture of pouring berries into a sieve)
4. Whip 2 dl semolina into it (picture of child whipping semolina into the pot)
5. Cook 10 minutes (picture of porridge cooking in the pot)
6. Whip until airy (picture in which a child is whipping the porridge with an electric beater)
7. Serve and enjoy (picture of finished serving)



### IDEA BOX

#### Other activity examples

- Sorting food substances: by colour, by shape, by origin, by place where grown, by composition
- Sorting the rubbish and recycling when preparing food (degradable materials, metals, glass, etc.)
- Memory games (food substances, preparation tools, and machines needed for food-preparation pictured)
- Self-esteem: one of the child's goals/skills, which he wants to learn in connection with his own eating. A good method is to make use of Ben Furman's *Kid's Skills* method (<http://www.kidsskills.org>), where a child's problems are converted into skills that he can learn. This does mean in *Kid's Skills* that he knows how to be inactive, as if he didn't care, but he learns to act as would be hoped. ("I dared to taste swede and gradually learned to eat it.")
- The *Aamu* [Morning] learning material series as guidance materials

## 10. Parenting partnership



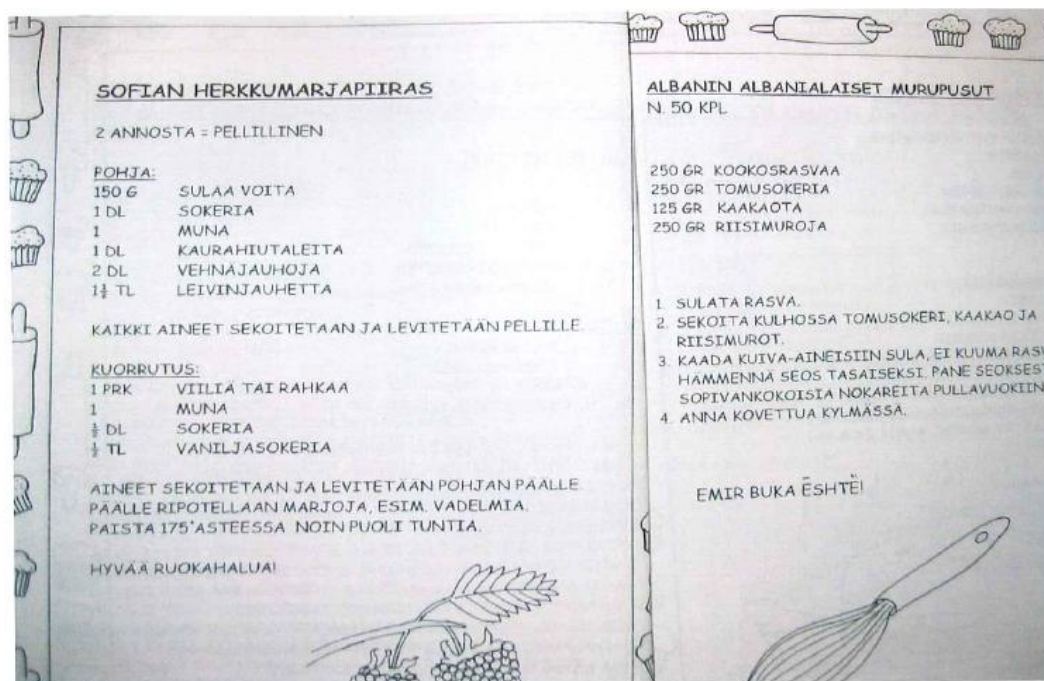
Figure 10.1. The Pupu market at the Pupuhuhta daycare centre brought families together to enjoy good food and a multicultural world of food.

By creating an educational companionship between parents and workers, children's nutrition and food education can be supported both at home and in daycare centres. The child's personal early education plan is set up with the parents, and the family's food habits, evaluations, and food-related education principles can also be looked at. It is also possible to discuss joint rules of play and behavior. The Sapere method can be talked about in parental evenings, notices, and daily meetings.

In addition to distributing notices and sharing information, it is worthwhile to include parents in the actions and planning them. During the Sapere project, families' joint activity evenings were found useful. In addition to the children's families, grandparents

could also be included in these. Families met, became acquainted with each others, and received communal experiences of togetherness. Food, food components, and food preparation were interesting to almost everyone in some way, and they were, at the same time, good "carrots" to entice families to do things together with the children.

During the Sapere project, parents reported that the children's interest in eating increased. At home, the children had talked about tasting foods, and they dared to test stranger foods better than before. The children wanted to participate in setting the table and going shopping with their parents. In many families, it was perceived that children can be involved in food preparation and kitchen work at a much younger age. The following examples come from the cooperation between the project daycare centres and families.



<p><b>SOFIA'S TASTY BERRY PIE</b></p> <p>2 SERVINGS OR A BAKING TRAY</p> <p><u>BASE:</u></p> <p>150 G MELTED BUTTER  1 DL SUGAR  1 EGG  1 DL OAT FLAKES  2 DL WHEAT FLOUR  1½ TSP BAKING POWDER</p> <p>ALL INGREDIENTS ARE MIXED AND SPREAD ONTO THE PAN</p> <p><u>DECORATION:</u></p> <p>1 JAR YOGHURT OR QUARK  1 EGG  1 DL SUGAR  1 TSP VANILLA SUGAR</p> <p>THE INGREDIENTS ARE MIXED AND SPREAD ONTO THE BASE. BERRIES, E.G. RASPBERRIES, ARE SPRINKLED ON TOP. BAKE AT 175 DEGREES (C) FOR ABOUT HALF AN HOUR.</p> <p>ENJOY!</p>	<p><b>ALBANIA'S ALBANIAN FAVOURITE BITS</b></p> <p>ABOUT 50 PIECES</p> <p>250 G COCONUT BUTTER  250 G POWDERED SUGAR  125 G COCOA  250 G RICE CRISPIES</p> <ol style="list-style-type: none"> <li>MELT THE BUTTER</li> <li>MIX THE POWDERED SUGAR, COCOA AND RICE CRISPIES IN A BOWL</li> <li>POUR THE MELT INTO THE DRY INGREDIENTS (NOT HOT BUTTER). STIR THE MIXTURE EVENLY. PUT LUMPS OF THE MIXTURE ON A BREAD PAN OF SUITABLE SIZE.</li> <li>LET THEM HARDEN IN COLD.</li> </ol> <p>EMIR BUKA ĚSTĚ!</p>
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Figure 10.2 Finnish and Albanian treats.

### 1. Families' joint cookbook

At the Pupuhuhta daycare centre, the families were asked to bring in one of the family's favourite recipes to be collected into a joint cookbook. The cookbook was made in the simplest and cheapest way: copies were made of the recipes and they were assembled into an A4-size two-sided cookbook, the pages of which were bound together with a traditional stapler. The finished cookbook was given to the mothers as a Mothers' Day gift. During the project there were several immigrant families at the Pupuhuhta daycare centre, and many treats came into the joint cookbook from various parts of the world.



### IDEA BOX

- Cookbooks can be prepared for sale and, e.g. the parents' association/group of the daycare centre has the opportunity to raise funds in this way for children's activities
- Families can buy the cookbook, and perhaps a trip can be organised with the funds obtained
- The family's recipe page can be given to their own child to be illustrated
- The food recipes prepared in the daycare centre with the children can be added to the book, so the children can become "Sapere consultants" for food preparation in the home kitchen
- Include recipes from the workers

## 2. Suitcase of secrets

At the Pupuhuhta daycare centre, a traveling suitcase was used between the daycare centre and the homes, the contents of which varied according to the themes and the development level of the children. The suitcase went to each child's home for a week at a time.

The goal was to familiarise the parents with the things happening at the daycare centre and give the families opportunities to study the contents of the suitcase together, at the same time spending time together enjoying stories, reading, looking at books, playing and games (idea inspired by the Canadian "The Storysack Programme" method).

During the Sapere theme, the suitcase had "directions for use": a play dough box (including a recipe for play dough), a picture book connected with children's eating, an envelope containing things to be kept as mementos, a memory game based on food, and a questionnaire for parents about the child's and the family's food habits (adaptation of the questionnaire, Appendix 3).



### IDEA BOX

- As the suitcase travels around, the recipes used by the families can be collected with it for the cookbook being prepared, which will be finished only after the suitcase has visited all parents
- In the suitcase, there can also be:
  - The children's favourite games from the daycare centre
  - Photographs taken of the Sapere activities and other documentation made by the staff (in the project, a fun video clip was made, a copy of which could also be included with the materials)
  - *Sapere News* newsletter produced by the children and the adults
  - Crafts ideas
  - Information pack of good nearby trip destinations that the children have for example already visited.
  - Brief information pack about the Sapere method and its benefits, specific activity examples
  - The route of the suitcase could follow, for example, the children's birthday times (hidden in the suitcase could be invitations for the child's own birthday, which will be celebrated in the daycare centre).
  - The families can send something along with the suitcase that they want to donate or lend to the daycare centre and would be good, in their opinion, in the children's food education (e.g. activity suggestions/ideas, tools, products they have grown themselves, berry jam prepared by themselves, photographs of fish caught by the children).



Figure 10.4. Tried it first during the day with a friend and then in the evening with father: "Is it sweet or sour?"

### 3. "What does this taste like, Daddy?"

The children invited their parents to taste various berries mixed into "viili" (curdled milk) when the parents came to get them from the daycare centre. The parents were blindfolded, so they couldn't see the food substance they were tasting, but had to taste their "viili" blind and describe the sensations brought by the senses of taste, smell, and feeling to their children. The children themselves had become familiar with sweet and bitter berries that day, and they thus shared their experiences with their families. The parents were informed about the taste tests in advance without revealing the main point. It was fun for the children to surprise their parents and act as the leaders of the taste test.

### 4. Biscuit-decorating workshop for families

At Christmas time, the families were invited to decorate biscuits when they came to take their children home. During the day, all daycare children had been baking biscuits and tasting and smelling the Christmas spirit brought by the biscuits. The parents decorated the biscuits together with their children in the group spaces. As the material for the decoration, powdered sugar dyed with various food colourings was used. Each group had its own space, where baked biscuits awaited the decorators. Some were eaten, of course, and the rest were left to be served at the Christmas party.



Figure 10.5. This is my favourite colour



Figure 10.6. Guess, did it taste good?

### 5. Fathers' Day treats

The daycare fathers and grandfathers were invited to a children's and men's evening in honor of Fathers' Day. Fathers and children prepared their favourite sandwiches with their favourite tastes.

The demanding performance was prepared for first by making chef's hats. Then, each father-child pair planned what kind of bread to make. They baked the bread themselves and enjoyed eating it together. The evening was a huge success, and more were wanted.

The fathers became acquainted with one another and they found that making things by hand suited the men well.



### IDEA BOX

- Families can also participate in exhibits and theme weeks.
- A sensory workshop can be organised for the whole family
  - The children will take their parents to various sense points.
- Make use of the parents' own resources and interests.
  - would a grandfather of one the children go fishing with the children?
  - does one of the children's parents work, e.g. at a bakery?
  - could the children take a trip to a garden of one of the children?
  - can pictures and other materials be found at a parent's workplace as supplementary material?
  - would one of the parents come to show how some food is prepared (e.g. immigrant families demonstrating their own food-preparation methods).

## Literature and article references used

<p><b>U. Applebye</b>, 1998. <i>Millaisessa makumaailmassa elämme?</i> [What Kind of Taste World Do We Live In?] Nutrifocus 1/98.</p> <p><b>R. Cederberg and P. Koski</b>, 2001. <i>Aukaise ovi aisteihin; maista, kuuntele ja tunnustele!</i> [Open the Door to the Senses; Taste, Listen, and Feel!]. Proseminar thesis, University of Helsinki, Home Economics and Craft Sciences Institute. Training programme for Home Economics teachers.</p> <p><b>U. Hagman and S. Algotson</b>, 2000. <i>Mat för all sinnen</i> [Food for all Senses]. National Food Administration of Sweden / Foundation for Meal Research.</p> <p><b>K. Hasunen, M. Kalavainen, H. Keinonen, et al.</b> <i>Lapsi, perhe ja ruoka.</i> Imeväis- ja leikki-ikäisten lasten, odottavien, and imettävien äitien ravitsemussuositus [Child, Family and Food. Nutrition recommendation for infants and play-age children and expecting and nursing mothers]. Publications of the Ministry of Social Affairs and Health, 2004:11.</p> <p><b>S. Huittinen.</b> <i>Ravitsemuskasvatus neuvoloissa</i> [Nutritional education in Childcare Clinics], 2005. Thesis. Social and Health Field. Jyväskylä University of Applied Sciences.</p> <p><b>H. Huovi</b>, 1984. <i>Taikaruukku ja muita satuja</i> [The Magic Jar and Other Stories]. Weilin &amp; Göös.</p> <p><b>U. Lehtinen, M. Haapala, and H. Dahlström</b>, 1993. <i>Aistien avulla oppimaan</i> [Learning with the Aid of the Senses].</p> <p><b>S. Mustonen &amp; H. Tuorila</b>, 2008. <i>Makukoulu. Makuoppituntien soveltaminen</i> [Taste School. Adapting Taste-learning sessions]. Operating manual for teachers and trainers. Sitra. ISBN 978-951-563-616-4.</p> <p><b>S. Pakarinen</b>, 2005. <i>Sapere-menetelmällä toteutettu esikoululaisten ravitsemuskasvatus kokeilu</i> [Nutritional education of Pre-school-age Children Implemented with the Sapere Method]. Degree thesis. Faculty of Exercise and Health</p>	<p>Sciences, University of Jyväskylä.</p> <p><b>T. Rähä</b>, 2006. <i>Salapoliisi Saperen ruokaseikkailut.</i> Lasten ravitsemuskasvatusta Jyväskylän päiväkoteissa uusin menetelmin [Detective Sapere's Food Adventures. Children's Nutritional education in Jyväskylä's Daycare Centres with New Methods]. Thesis. Tourism, Nutrition, and Economics Area. Jyväskylä University of Applied Sciences.</p> <p><b>H. Tuorila, [K.] Parkkinen, and K. Tolonen</b>, 208. <i>Aistit ammattikäyttöön</i> [The Senses for Professional Use]. WSOY, Helsinki.</p> <p><b>H. Tuorila and U. Appelbye</b> (eds.), 2006. <i>Elintarvikkeiden aistinvaraiset tutkimusmenetelmät</i> [Sense-based Research Methods for Foods]. University of Helsinki.</p> <p><b>Sitra.</b> Makukoulu [Taste School], 2008. <a href="http://www.sitra.fi/julkaisut">www.sitra.fi/julkaisut</a></p> <p>Sosialli- ja terveystieteiden tutkimus- ja kehittämiskeskus [Research and Development Centre for the Social and Health Field], 2005. <i>Valakunnalliset varhaiskasvatussuunnitelman perusteet</i> [The National Curriculum Guidelines on Early Childhood Education and Care in Finland ].</p> <p>Articles on the Sapere method:</p> <ul style="list-style-type: none"> <li>– <i>Lapsen maailma</i> 2/2004</li> <li>– <i>Bolus</i> 4/2004</li> <li>– <i>Meidän perhe</i> 8/2004</li> <li>– <i>Keskisuomalainen</i>, September 16, 2004 (trip to the Hakola farm)</li> <li>– <i>Helsingin sanomat</i>, October 4, 2004</li> <li>– <i>Keskisuomalainen</i>, November 14, 2004 (Taikalamppu's Father's Day sandwiches)</li> <li>– <i>Kuokkanen-Kuokkalan asukaslehti</i>, Jyväskylä (October 2004)</li> <li>– <i>Suur-Jyväskylän lehti</i>, March 2005 (Pohjalampi fish story)</li> <li>– <i>Jyväskylä-lehti</i>, April 2005</li> </ul>
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## Appendix 1: Food information on the Internet

- 1. <http://www.mmm.fi/ravitsemusneuvottelukunta>**  
Nutrition recommendations, links to recommendations for various age groups
- 2. [http://www.thl.fi/fi\\_FI/web/fi/](http://www.thl.fi/fi_FI/web/fi/)**  
National Institute for Health and Welfare  
Nutrition and national diseases  
Nutrition study
- 3. <http://www.evira.fi/portal/fi/>**  
Information about foods, packaging, additives, food allergies, recommendations for special groups, food legislation and monitoring, food safety
- 4. <http://www.ruokatieto.fi/>**  
Abundance of material: including humans and nutrition, culture of food and customs
- 5. <http://www.leipatiedotus.fi>**  
Grain and bakery products, various grain plants
- 6. <http://www.ruokatieto.fi/liha/>**  
Meat and meat products
- 7. <http://www.maitojaterveys.fi/>**  
Milk and milk products
- 8. <http://www.margariini.fi/>**  
Nutritional fats, fat products
- 9. <http://www.fineli.fi>**  
Fineli national food-composition database / Institute for Health and Welfare
- 10. <http://osteoporoosiyhdistys.fi>**  
Site of the Luustoinen family, nutrition and bones
- 11. [www.tohtori.fi/ravinto/](http://www.tohtori.fi/ravinto/)**  
Basic information on nutrition and diet
- 12. [www.sydanliitto.fi](http://www.sydanliitto.fi)**  
Heart and nutrition
- 13. [www.diabetes.fi](http://www.diabetes.fi)**  
Diabetes and nutrition
- 14. <http://www.allergia.com>**  
Information about food allergies and special diets
- 15. <http://www.vegaaniliitto.fi>**  
Information about vegetarian diets
- 16. [www.health.fi](http://www.health.fi)**  
Centre for HealthPromotion  
Health network /Nutrition
- 17. <http://www.wellou.fi/lapset/>**  
Internet service for teaching and learning information on health, for schools and parents of children: including food and nutrition, ages 6-9 and 10-12, and exercise, rest and sleep, ages 6-12.
- 18. Sweden: [www.slv.se](http://www.slv.se) (Sweden's National Food Administration)**  
Information about the "Sapere" method is found on this website
- 19. <http://sapere.ebaia.com/>**  
International website of the Sapere association.  
Information about the Sapere method and links to Sapere users in various countries.



## Appendix 2: Hints for teachers on asking questions

### 1. Observation questions

What colour/shape is xxx? What sound is heard when you eat XXX or split it with a knife?

### 2. Memory questions

Memory questions bring children's previous memory images, experiences, and feelings to mind about a particular food substance / food. What kind of observations have the children made and with whom? Is xxx always this colour/shape? How have you seen it before (e.g., raw berry > ripe berry)?

### 3. Comparison questions

Comparison questions guide to observe the appearance, size, weight, form, taste, and changes in foods in various situations (e.g., from whole carrot to carrot casserole) and in various food preparation phases. In the ripening and preparation of food substances and in actual cooking, time sequence, classification, quantities, etc., can be taken into consideration. For vegetables, we can for example consider when a carrot or berries are alive and growing and when they change to "lifeless" and no longer grow. How does the colour/shape change? What does it change to? Does this happen with other foods (e.g., what does sugar change to when it is mixed into warm water or when it is heated in a pan)? Which of these grow in the ground and which on top of the ground? What grows on a tree, what grows on a bush? Which of these potatoes is the largest?

### 4. Activation and deduction questions

Activation and deduction questions guide children to make assumptions, acquire additional information, and experiment with and observe some phenomenon belonging to the world of food. With children, cause/effect relationships can be considered and they can deduct, e.g., what happens to berries when they are cooked.

What happens if xxx is baked? Where does this sound come from? Why do seeds have to be soaked? What happens to water when it boils? Why/when does something happen (e.g., frying an egg in a pan)? Where does this odour come from?

### 5. Application questions

In application questions, children can be guided to think about something that has been learned in new situations and they can be encouraged to experiment and confront their prejudices with regards to, e.g., some food substance. What happens if berries are crushed? What taste does water change to if lemon is added to it? What colour does yoghurt change to when blueberries are added instead of strawberries? What else can be frozen?

### 6. Opinion and assessment questions

In the Sapere method, it is important to remember that a child's own experience it not to be belittled or judged wrong. With the aid of questions, the child hears that his experiences are given value and respected. Children can create and present their own assessments about the world of food with the aid of the various senses and learn to put their own experiences into words based on their own valuations.

Why does this taste better in your opinion? Does some colour affect why xxx tastes better? Do you like fresh carrot more than cooked carrot? How would you like to set the table? Is salad easier to eat when vegetables are not mixed in?

Source: Leena Tauriainen: *Lapsi ihmettelee, tutkii, kokeilee, ja keksii*. Varhaiskasvatuksen pedagogiikka [A Child Wonders, Studies, Experiments, and Invents. Early education pedagogy]. Early Education Institute.

## Appendix 3: Adjectives describing various sensory experiences

sticks to teeth	solid	like dirt	like rye
sour	springy	crumbly	cloudy
splits easily	bright	granular	smooth
dim	astringent	leathery	tough
flaky	crystalline	damp	salty
mouldy	lumpy	thin	melts in your mouth
like honey or mustard,	hard	thick	fibrous
fruity	fibrous	burned	pasty
porous	dry	soft	doughy
frosty	rubbery	peppery (etc. for different spices)	sticky
like jelly	bubbly		even
steamy	hot	stinging	sharp
sugary	cold	burned to the bottom	fiery
powdery	slippery	burning	fusty
runny	warm	fizzy	nauseating
grainy	transparent	pulls the cheeks in	rich
rough	loose	woody	foamy
coarse	sweet (like sugar, toffee)	mushy	stretchy
furry	tasteless	fresh	watery
bitter	juicy	grainy	cool
shiny	juiceless	crackling	herbal
	metallic-tasting	greasy	cloying
		rough	irritating

## Appendix 4: Suitcase questionnaire for families

Child's name and group \_\_\_\_\_

1. What kinds of traditions does your family have connected with food and food preparation?

- a. going shopping together
- b. child/children participate(s) in food preparation
- c. setting the table together
- d. cleaning the table after eating
- e. tasting different kinds of foods and becoming familiar with them
- f. things connected with preparation for celebrations
- g. family eating together in other places than at home (e.g., in a restaurant, at grandparents' home), where?

\_\_\_\_\_

h. trips for picking berries, mushrooms, and/or fishing

i. something else, what? \_\_\_\_\_

2. What is the child's attitude towards new tastes and tasting new foods?

- a. generally enthusiastic and brave
- b. often tastes when encouraged
- c. sometimes tastes when encouraged
- d. refuses to taste

3. What are the child's favourite foods and treats?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. What foods does the child dislike or shy away from?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. What is your child's greatest challenge in eating at this time?

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5. What things bring joy and interest to eating?

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6. Pleasant memories about your family's and children's eating (e.g., comments made, events, parties, etc.)

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7. Together with your children decide what the family's favourite food is, and put the recipe in the suitcase. Thank you!

Name of the food \_\_\_\_\_--

My family's favourite recipe:

## Appendix 5: Sensory table for comparison (sweet and sour) for adult documentation

	food substance 1. sweet (e.g., raisin)	food substance 2., sour (e.g., sour crisp)
SIGHT		
HEARING		
ODOUR		
FEELING AND MOUTHFEEL		
TASTE		