



National guidelines for school meals

Preschool class, compulsory school, upper-secondary school, and leisure time centre

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Updated August 2023

ISBN: 978-91-7714-266-9

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Maskot bildbyrå, Mostphotos, Scandinav Bildbyrå.

Layout: Carlsöö & Co



Preface

Swedish school meals give all pupils, regardless of background, the opportunity to have good eating habits and are an important part of the work for equal health and sustainable development.

Eating healthy food results in better conditions for learning and a calmer atmosphere at school. School meals can also awaken curiosity about food, the environment, health and the journey of food from farm to table. Better knowledge about food and meals can lead to more quality-conscious consumers and contribute to more sustainable food consumption.

There are many ways to use food and meals in education – the school meal is a free educational tool that smells and tastes good. When teachers and food service staff work together to make school meals more than “just food”, a powerful educational tool is created.

The national guidelines for school meals are intended to provide overall guidance, support and suggestions on how to work to create pleasure in food, make use of meals in educational work, and promote good eating habits. The advice is based on a comprehensive evaluation of the scientific evidence and on the Swedish Food Agency's dietary guidelines. The advice also includes additional support for mealtime education and reduced environmental impact.

School meals are covered by the school's governing documents, such as the Education Act and the curriculum. The National Agency for Education has therefore contributed to the parts of the guidelines that address how meals are linked to the school's educational work.

The Swedish Food Agency hopes that the guidelines will be used in municipalities and schools to support the important work of promoting sustainable eating habits – now and in the future.

*Annica Sohlström
Director General
Swedish Food Agency*



Sustainable development means development that meets the needs of the present without compromising the needs of future generations.

Introduction

Food and meals are central to our lives, as a source of enjoyment, as a means of social interaction, and as a carrier of culture. Eating habits are also of great importance for both health and the environment. A nutritious school lunch, that reaches the stomach, is particularly important for pupils who do not eat well at home. In this way, school meals can contribute to a more equal society and sustainable development.

Possibilities through schools

School meals were introduced in Sweden over 100 years ago, with the aim of giving all children the opportunity to go to school and learn, regardless of their socioeconomic situation.

Today, Sweden has statutory requirements for free and nutritious school meals for all pupils, regardless of their parents' income. School meals are therefore still an important tool for promoting health and equalising socioeconomic differences.

School meals can also be used within the schools education program. The meal is a gathering place where many school subjects interact, which can contribute to an interdisciplinary approach. The meal can be a teaching tool that can be smelled, tasted and touched. Every day.

Schools work on environmental issues is also linked to food. The Education Act states that sustainability issues must be embedded in teaching and that the Curriculum must contain clear objectives on sustainable development. Our food consumption affects the environment both positively and negatively. One challenge lies in reducing the climate footprint of food, which currently accounts for a quarter of Swedes' total climate impact.

Schools have a unique opportunity to use meals as a positive and natural way to promote a healthy lifestyle and good eating habits among pupils of all ages, from preschool class to upper-secondary school. Schools can also empower pupils to be part of the solution for a sustainable society.

Investing in good meals

Integrating school meals in the educational work adds value – without adding cost. Investing in good school meals is an investment in the entire educational system. Meals are important for pupils' health, well-being and ability to learn – factors that ultimately affect academic performance. That is why school meals are an important part of a good school and a valuable resource to be utilised.

About the guidelines

The Swedish Food Agency's guidelines for school meals are based on science and proven experience. They are intended as overall guidance, support and suggestions on how to create food enjoyment and promote sustainable eating habits. By highlighting different quality areas and governing documents, the guidelines can also support policy work and procurement of both food and meal services. School meals are part of the local development, sustainability and public health work in the municipalities. Thus,



it is each municipality, individual school organiser, school or staff group that decides and plans in detail how to provide good food and meals at school. Take advantage of the valuable resource that school meals are. Good meals do not have to cost more than bad ones. It is a matter of making the right investments.

Systematic quality management

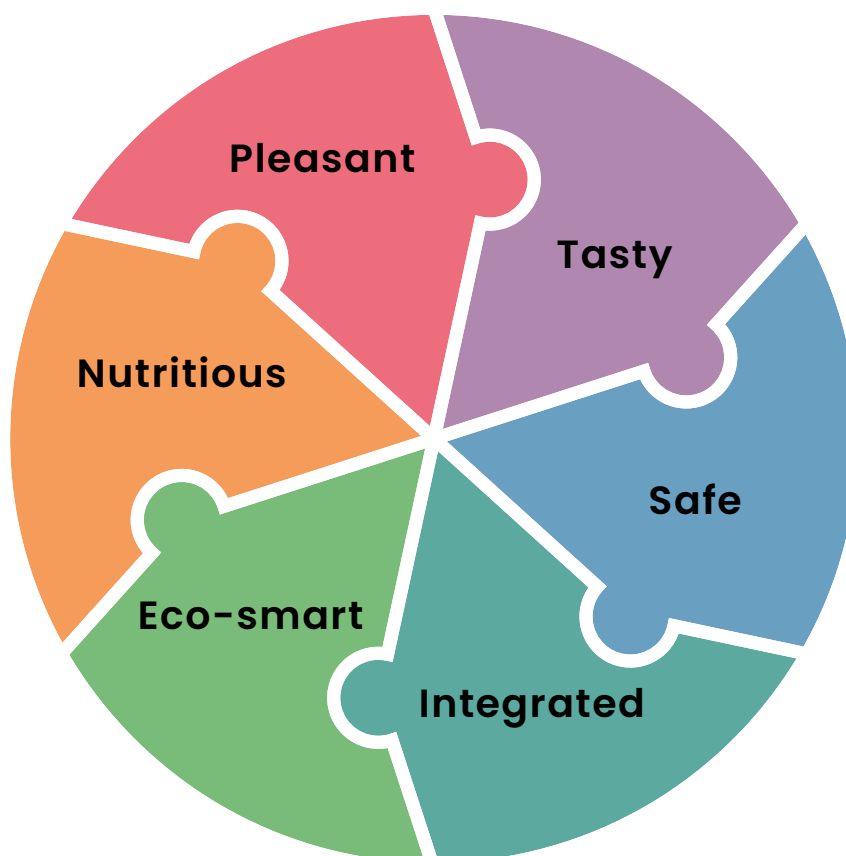
The Education Act requires each school organiser and school unit to conduct systematic quality management in which activities are continuously planned, monitored and developed. Since school meals are part of education, they are also covered by this requirement.

The quality management work must be carried out in dialogue with staff, pupils and guardians. The principal is responsible for the work. For systematic quality management, the organisation must agree on goals and ambitions, regularly measure quality, and discuss development and improvement.

- Set your own goals for school meals and measure quality regularly, preferably every semester.
- For example, create a group that discusses the current situation and develops proposals for development and improvement.
- Involve pupils in the quality work.

More support on how to work with systematic quality management can be found on the National Agency for Education's website www.skolverket.se.

There is also a free tool for assessing the quality of school meals at www.skolmatsverige.se. Read more in the section *Nutritious meals*.



The Meal Model provides a holistic approach to good meals and can be used in the planning and monitoring of public meals.

The Meal Model – a good meal consists of several parts

A meal is more than the food on the plate. It also includes factors such as the room, the company and the atmosphere. It is helpful if all school staff have a common understanding of what a good meal is. To support setting goals for and monitoring the quality of meals, the Swedish Food Agency has created a meal model in the form of a puzzle. The model consists of six different areas, all of which are important for the health and enjoyment of the food.

It is important that the food is *tasteful* and *enjoyable* to ensure it ends up in a child's stomach. A good meal is also *nutritious* and *safe* to eat. These two areas are covered by legislative requirements. When we say *eco-smart*, we mean meals that contribute to environmentally sustainable development and

the national environmental objectives. *Integrated* means that the meal is part of and can be utilised as a resource in the school, for example in the educational work. Expertise, commitment and collaboration are required for meals to be really good. This responsibility rests with the whole school.

The Meal Model can be used as a tool in the process of developing meals at school.

In order for the school meal to be good from an overall perspective, it is helpful if the governing documents include a description of objectives, procedures and division of responsibilities within each piece of the puzzle. In connection with procurement, the Meal Model can be used as support for those who plan and produce procurement documents.

The guidelines for school meals are based on the Meal Model. Each section describes each piece of the puzzle in more detail.

5 essentials for good school meals

– for those in charge of school meals.

Focus on the pupils

There is no universal solution for all pupils. Start from the pupils' experiences, interests, needs and opinions and listen to their thoughts and ideas. It is important to listen to the pupils and get them involved. Keep your operations flexible.

Focus on knowledge and skills

Create an organisation that attracts competent and dedicated staff – it can make a big difference. Everyone who works with or near the meal needs to know what characterises a good meal and what their role is.

Look at the whole picture – use the Meal Model

A meal is much more than the food on the plate. The Meal Model provides a holistic approach to good meals and can be used in the planning and monitoring of school meals.

Define responsibilities and enable collaboration

Good meals require an organisation with a clear mandate to drive development forward and which enables dialogue and collaboration across professionals.

Set goals, prioritise meals and ask for results

Establishing goals for meals is important for creating a common vision for everyone involved in procurement, preparation, serving and consumption. Monitor and evaluate the quality of meals and how much pupils eat continuously, to ensure that meals are enjoyed and actually eaten.



Tasty meals

With good ingredients and the right expertise, school meals can be the highlight of the day. Good food at school is food that pupils find appealing and enjoy, but also challenges their tastes and preferences. These meals can provide tomorrow's consumers with knowledge, interest and curiosity about food and meals.

Right expertise for tastier food

Preparing tasty and healthy food that pupils enjoy requires good ingredients, knowledge and commitment. Regardless of whether the food is prepared from raw ingredients or using prepared or semi-prepared products, the food should be of good quality. Knowledge about ingredients and appropriate cooking techniques and methods is essential to ensure that food is tasty and healthy. Food law requires that food service staff have necessary knowledge and skills to perform their work safely, but the law does not set out any specific training requirements (see the

section entitled *Documents governing food services*). However, it is often necessary for kitchen staff to have restaurant or catering training to at least upper-secondary level or equivalent proof of qualifications.

A workplace that provides opportunities for professional development is more likely to attract – and retain – competent, committed and professional staff. It is important that kitchen staff are encouraged to develop in their professional role, are offered continued professional development, and are given mandates that correspond to their level of expertise. Exchanging experiences with other school restaurants is one way to get new ideas and develop in one's profession. Today, inspiration in the form of recipes, images and forums are readily available, including on the web and social media. There are also cookbooks aimed specifically at school cooks. Whether the menu is planned centrally in the municipality or locally at the school, it is important to have a good dialogue between all parties involved. Cooks should play a central role in planning the menu and recipes. The knowledge and skills of the food service staff can also be utilised in the educational work.

Appeal to all the senses

We experience food and meals with all our senses. Serving food beautifully and offering flavours and aromas that are appealing and enticing is important to whet the appetite. A variety of colours and shapes make us want to take more, and many children find brightly coloured food more attractive. Offer a varied salad bar with at least five different types of vegetables or vegetable mixes. Another way to get children to eat more vegetables is to position the salad bar before the rest of the food.

Using fresh spices to decorate the food adds to the experience. Spice up the menu with inspiration from many different food cultures. Using foods and dishes from different cultures provides an opportunity for variety and new knowledge. Spicy flavours do not have to be “grown-up” foods – try them out and listen to the pupils.

The aromas from cooking and baking bread can spread even outside the school restaurant, increasing both appetite and curiosity. Kitchens and serving solutions that not only allow for aromas, but also for encounters between cooks and diners help pupils put a face to the cook and create a personal relationship with the food on the plate.

Inspire and challenge

Children usually prefer the food they are already familiar too. Good food in schools is therefore food that pupils enjoy but still challenges their tastes and preferences. Preferences can change back and forth during childhood, and most children have a natural scepticism towards new dishes, foods and flavours. But it is also during childhood that we can broaden and develop our preferences. Research suggests that children can learn to like any food if they are in the right environment and if it is presented in an appealing way.

Pupils are more likely to enjoy food if they have a positive experience together, in a calm environment. It is important to try things without being forced and in ways that arouses curiosity. For example, if the pupil sees chickpeas on a salad bar for a long time,



and adults and friends take them, they may eventually be willing to try them themselves. Adults have an important role to play here as good role models.

Offer multiple dishes every day. This can attract more pupils to the school restaurant and contribute to more pupils eating the food.

Offer small tastings

Offering small tastings alongside new dishes or at the salad buffet allows pupils to taste the food before deciding how much to put on their plate.

A tip is to have a basket for clean spoons and a separate one for dirty spoons for the small tastings in the serving area.



Integrated

Integrated meals

No matter how much resources a school puts into skilled teachers and good learning materials, it is hard to learn if you are hungry. A good school meal ensures that pupils are full and able to focus and perform well. It helps to create a calmer atmosphere in and between lessons when pupils feel full and satisfied. But meals can also be used in education and contribute to increased well-being, social interaction and good relationships.

An opportunity for social interaction, participation and learning

School meals are part of the education. This is stated in the preparatory work for the Education Act (2010:800). In addition to providing energy and nutrition, meals can be used as an educational tool – not least within the school's mission to provide pupils with knowledge about an environmentally sustainable and healthy lifestyle. However, in many schools meals are an unutilised educational resource.

Educational meals

The purpose of an educational meal is to build good relationships between pupils and with adults, and to give pupils a positive experience of meals

and a healthy attitude towards food. Children and adolescents also need adult role models and support at mealtimes. This can happen naturally by just sitting at the same table and eating the same food. Educators can act as role models and perhaps even encourage pupils to explore tastes, smells, colours and new foods.

The meal can be used to spark curiosity about farming, ecology and maths, or to talk about culture, society and democracy. Many people in school have roots in other cultures. Food traditions change slowly, especially those centred on holidays and other celebrations. But there are also cultural differences in everyday eating habits. Meals are a great way to learn about other cultures and new flavours. Regardless of the topic of conversation, a pleasant, preferably extra-long, period around the dining table is one of the most important things an educational meal can provide.

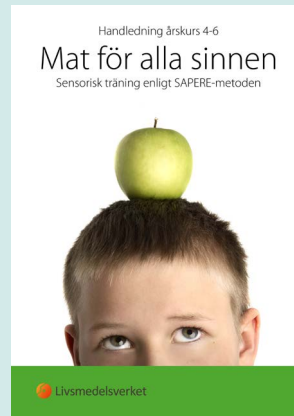
Working with the meal as an educational resource can also help to build bridges between the food service staff and the educational staff – which is important for good meals. For example, inviting the school cook into the classroom to talk about food and nutrition, working with sensory training (see fact box), letting pupils measure consumption or waste themselves, doing an internship in the school kitchen or visiting a food producer together with the staff in the school restaurant are some examples of educational integration of the school meal. By meeting and getting to know the food service staff, pupils also gain insight into a profession.

There are also advantages with interaction between the school restaurant and home economics classes, as the food service staff and the teacher can complement each other's areas of expertise.

Scheduled lunch

To reduce stress and the risk of pupils eating too little, some schools have switched to working with so-called scheduled lunches. This means that the pupils go to the school restaurant with the teacher and eat during class time. A lesson can either start or end with lunch. For longer lessons, lunch can be scheduled in the middle of the lesson. Once the class has finished eating, it goes back to the classroom and continues the lesson. In this way, lunch takes place during a scheduled time and is not confused with a break/recess. Breaks for games and outdoor activities are

scheduled at a different time of the day. Eating without stress during a scheduled lunch can also help reduce food waste.



Educational material

Sensory training – food for all senses

Studies show that children are more likely to try new foods and dishes when they have worked with what is known as sensory training. Sapere is a method developed for middle school children that trains children's language and sensory skills – how we experience food and meals with all our senses, using smell, sight, touch, hearing and taste.

Mat för alla sinnen [Food for all senses] for grades 4–6 is the Swedish Food Agency's guide to the Sapere method. It aims to broaden pupils' taste repertoire and critical thinking about food and taste, in a fun way

Mat för alla sinnen can be ordered or downloaded at www.livsmedelsverket.se.



Meals can be used in educational work and contribute to increased well-being, social interaction and good relationships.

Participation leads to engagement

Involving pupils in meal-related issues allows schools to learn about pupils' views on school meals. Involving pupils also gives schools the opportunity to work with pupils' knowledge and values about food and meals. Increased involvement and participation can lead to increased responsibility. In this way, school meals can be an important part of the school's work with democracy.

Many adolescents have strong opinions about what they want to eat and why. Communicating facts about the importance of food for health and its impact on the environment in a pedagogical way, while respecting pupils' own opinions, requires both knowledge and sensitivity.

When planning and producing school meals certain factors must be taken into account, such as budget, food procurement, environmental impact and the legal requirement for nutritious school meals. It is important that pupils understand these conditions when they are involved in making decisions about the menu and which dishes that are served.



Meals council

There are many different ways to involve pupils and guardians in meal-related activities. Raising meal issues at class and student councils is one way of contributing to good meals. Having a meals council is another way to strengthen collaboration between relevant staff groups, parents and pupils. Meals council can also be a room for spreading knowledge about how food, health and the environment are linked.

At the council's meetings, specific opinions are often expressed about how the food tastes, the meal environment, serving times, the

noise level, the number of dishes served and the selection in the cafeteria – food engages and affects most people. Through the meals council, everyone in school can have a say, for example by suggesting what the menu should look like, giving ideas on how to make mealtimes calm and pleasant, and discussing how the school wants meals to be organised or how meals can be a learning opportunity.

To provide a basis for improvement, the meals council can conduct pupil surveys. However, the meals council should not be the only way for pupils to have a say in school meals.



Pleasant

Pleasant meals

A good school meal is not just the food on the plate, but also, to a large extent, the experience of interacting with staff, other pupils in the restaurant and the layout, smells and sounds of the room.

The overall atmosphere determines if it is worth sitting down and enjoying the school lunch for a while. School food is also an important part of the pupils' – and adults' – working environment.

The social meal environment

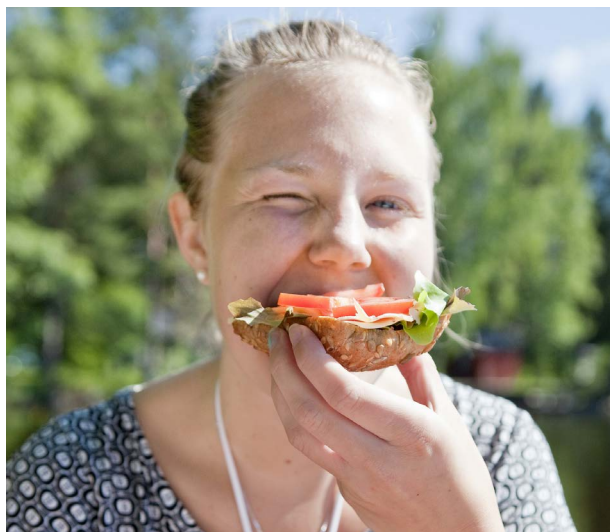
The behaviour of both pupils and adults in the school restaurant affects the atmosphere and enjoyment. Just like in an ordinary restaurant, it is important to make people feel welcome. The school restaurant should be designed so that both pupils and adults enjoy eating there. It is good if there are rules on how to behave in the school restaurant, as well as they need to be followed.

The meal environment is calmer if adults eat with the pupils. This helps shy and lonely pupils to feel more secure and often calms down rowdy pupils. Even for older pupils, it is valuable to have adults present at mealtimes.

One aspect of the communication with pupils, involves sharing the menu on the school website, on social media or in other ways. It is also pleasant and welcoming to be greeted in the school restaurant by a “Today's Lunch” sign. In the serving area, the dishes can also be presented with signs indicating the name of the dish, and preferably also the ingredients.

Scheduling

The schedule should be organised so that each pupil has a fixed and regular lunchtime, at some point between 11:00 and 13:00. To allow pupils enough time to eat, as well as time to talk and socialise, each pupil should be able to sit at the table for at least 20 minutes. This is in addition to the time it takes to take food as well as taking away their dishes.



The physical meal environment

A clean, fresh and well-decorated environment contributes to appetite and well-being among pupils. With plants, screens and good lighting, a large school restaurant can be delineated in smaller areas and feel cosier. The sound environment also affects the dining experience. There is currently a wide range of soundproofing fabrics or other noise-reducing materials that can be installed on ceilings, walls, floors, under or on tables, under chair legs or elsewhere. Unnecessary clatter can be avoided by separating the dish drop-off area.

In schools that serves breakfast and snacks, it is important that these meals also are served in a pleasant and attractive way.

Deficiencies in the physical and social environment reduce pupils' opportunities for good eating habits. Stress and noise in the school restaurant, exclusion, and bullying can lead to some pupils choosing not to eat at school. This is a working environment issue that should be addressed by pupil safety representatives and adults in the school. In grades 7–9 and in upper-secondary schools, pupil safety representatives represent all pupils in working environment issues at the school. This means that the representative must monitor the pupils' working environment, report shortcomings and put forward views and requests to the school's work environment manager.

Outdoor meals

The Curriculum for compulsory school emphasises the importance of learning about health and lifestyle through nature and the outdoors. Occasionally serving, eating and perhaps preparing food outdoors can be an exciting and fun part of the school day. This can be done both in the schoolyard and on trips and outdoor days. The food can be cooked over an open fire, on a barbecue or on a camping stove, or be brought along and kept warm in thermoses. If the food is to be cooked outdoors, many preparations can be made in the kitchen beforehand, such as cleaning, chopping and parboiling. Read more about food safety when cooking outdoors in the section *Safe meals*.

Nutritious meals



School meals should provide the energy and nutrition that pupils need to grow, develop and be able to concentrate and learn during the school day. Schools also have an educational opportunity to show pupils what healthy food is, thus providing a foundation for good eating habits in the future.

Planning nutritious meals

The Education Act requires school meals to be free of charge and nutritious. The Nordic Nutrition Recommendations 2012 (NNR) are the official

nutritional recommendations in Sweden. They form the basis for the Swedish Food Agency's general dietary guidelines and should also be used as a starting point when planning school meals. Pages 24–29 contain recommendations on food choices based on NNR and the general dietary guidelines.

Planning the menu should be done in close collaboration with the staff working closest to the diners. This increases the chances of being able to offer both tasty and nutritious meals that pupils like. It is also important that the staff responsible for planning, preparing and monitoring the meals have relevant training and expertise, and can ensure that the food is nutritious.

NORDIC NUTRITION RECOMMENDATIONS

The Nordic Nutrition Recommendations (NNR) are compiled by a Nordic expert group and are based on systematic reviews of scientific literature.

The NNR specify the recommended daily intake of nutrients and reference values for energy intake for different age groups. The recommendations aim to meet the body's nutritional needs as well as prevent poor health in the long term. For children aged 2–17, the recommendations for protein, fat and carbohydrates are similar as for adults. For vitamins and minerals, there are age-specific recommendations. Although the recommendations are given as recommended daily intake of different nutrients, it does not mean that you need to get that amount of all nutrients every day. The reference values are an average that applies over a prolonged continuous period. The Swedish Food Agency's website provides information on how the NNR can and should be applied.

The Nordic Nutrition Recommendations also include recommendations on physical activity. Children should engage in at least 60 minutes of moderate to vigorous intensity physical activity per day and reduce sedentary behaviour. Read more about physical activity and the design of the school's physical environment on the websites of the Public Health Agency of Sweden and the National Board of Housing, Building and Planning.

Healthy eating habits

There are no major differences between food that is considered healthy for children and adolescents compared to adults. However, the nutritional content is particularly important for children, as they grow and develop.

Food is not only important for health, but also for the environment. The Swedish Food Agency's guidelines therefore take into account the environmental impact and how schools can choose food in an environmentally friendly way. Fortunately, food that is good for the environment is in most cases also good for health. Pages 24–29 contain guidelines on food choices divided into different food groups. The guidelines are based on the Swedish Food Agency's general dietary guidelines *Find your way to eat greener, not too much and be active*.

Healthy eating habits include plenty of vegetables, fruit and legumes, wholegrain products, low-fat dairy products, fish, shellfish and plant-based oils high in unsaturated fats. At the same time, consumption of soft drinks, juices, sweets, ice cream and pastries should be very limited.

Eating a varied diet usually provides the right amount of nutrients in a good mix. But with the eating habits that are common in Sweden, some nutrients are a little more difficult to get the right amount of. For example the balance between saturated and unsaturated fat and the food's content of vitamin D and iron. Most children and adolescents in Sweden get too little polyunsaturated fat, but more saturated fat than recommended. Many children also eat too much high sugar and low nutrient food. If children are to get all the nutrients they need, there is no room for too much of these products.

Find your way

to eat **greener, not too much** and **be active**



MORE

vegetables
legumes
fruit and berries
fish and shellfish
nuts and seeds
exercise



SWITCH TO

wholegrain
vegetable
fats and oils
low-fat dairy
products



LESS

red and processed
meat
salt
sugar
alcohol



Nutrients that can be difficult to get enough of

Polyunsaturated fats

The type of fat you eat is more important to your health than the total amount of fat in your diet. Fats are usually divided into saturated and unsaturated fats. Unsaturated fats include monounsaturated fats and polyunsaturated fats. Polyunsaturated fats are essential and, since the body cannot produce them itself, we have to get them from our food. These fats are needed for purposes such as brain development. Research also shows that switching from saturated fat to polyunsaturated fat in the diet helps to reduce the risk of cardiovascular disease, later in life.

Vitamin D

We get vitamin D in two ways: from food and from the skin when being exposed to sunlight. But during the winter months, virtually no vitamin D from the sun is produced in our latitudes. To meet our needs, we need to eat enough foods that are naturally rich in vitamin D, such as fatty fish, and foods that are fortified with vitamin D, such as milk, fortified drinks and cooking fats. Eggs and meat also contain some vitamin D. Some children are advised to take vitamin D supplements; see the Swedish Food Agency's website.

Iron

Children and adolescents grow quickly and therefore have a great need for iron. Iron is mainly found in offal and blood foods, such as liver pâté and black pudding. It is also found in meat, fish, eggs and plant foods, such as legumes and wholegrain products.

Folate

Folate (or folic acid) is needed for the metabolism and for the production of red blood cells. Deficiency results in anaemia. The best sources of folate are dark green leafy vegetables, cabbage, beans, chickpeas, lentils, fruit and berries. Wholegrain products, soured milk and yoghurt also provide folate. Folate does not tolerate heat very well. If the school lunch includes at least 100 grams of vegetables and sometimes wholegrain and dairy products, it usually provides enough folate.

Meal order

Children and adolescents need roughly the same amount of nutrients as adults. To meet energy and nutrient needs, food intake needs to be spread over several meals during the day, usually breakfast, two main meals and two to three nutritious snacks. Between-meal snacking is not recommended as it can negatively affect both appetite and dental health.

An average school lunch should provide about 30 percent of pupils' daily energy and nutrient needs. See the reference values on page 49.

The daily lunch offering should consist of

- one or more hot dishes, including at least one vegetarian dish that everyone can eat
- a salad bar with at least five different components
- bread and fat spread(s)
- water and possibly milk or fortified vegetable drinks.

Soup meals

Even soup meals should provide enough energy and nutrition. A nutritious soup should contain a potato, pasta or other carbohydrate-rich component as well as a source of protein, or be served with a sandwich with a protein-rich topping or milk. In addition, extra slices of bread or a dessert, such as a pancake, may be needed. Vegetables should also be served with soup meals.

Porridge, soured milk and sandwiches

Porridge, soured milk and sandwiches are best for breakfast and snacks. They provide too little energy and nutrition to be served as lunch. However, on occasion, there may be room for such meals, such as the traditional rice pudding at Christmas time.

Use the Plate Model!

The Plate Model can be used as an educational tool to teach children and adolescents how to arrange the food on their plate in a way that gives a good balance to the meal. The aim of the model is to increase the amount of plant-based food and reduce animal products, which is good for both health and the environment.

The Plate Model has three parts – two larger and one slightly smaller. One of the larger sections is filled with vegetables and root vegetables and the other with potatoes, pasta, rice or other cereal products. The smaller section is filled with meat, fish, eggs, or beans and lentils.





What can be included in the salad bar

The salad bar should consist of at least five different components (vegetables, vegetable mixes or fruit) every day.

Fibre-rich vegetables and root vegetables

At least three different ones every day.

Examples: carrots, turnips, parsnips, celeriac, beetroot, cabbage, red cabbage, kale, salad cabbage, cauliflower, broccoli, corn.

Legumes

At least one every day.

Examples: green beans, peas, beans, lentils, chickpeas, hummus (chickpea spread), lentil purée.

Salad vegetables/fruit

At least one salad vegetable or fruit every day.

Examples of salad vegetables: tomatoes, leafy lettuce (romaine, green, iceberg, rocket salad), spinach, cucumber, peppers.

Examples of fruit: apples, pears, plums, citrus fruits, nectarines.

Follow-up, documentation and nutritional calculations

The Education Act requires each school organiser and school unit to conduct systematic quality management in which activities are continuously planned, followed-up and developed. Since school meals are

part of education, they are also covered by this legal requirement. The documentation must also be fed back to the school organiser level, i.e. the responsible committee or board.

To know that the food served contains an appropriate amount of energy and nutrients, and thus meets the legal nutritional requirements, the organisation needs to monitor the nutritional quality of the meals. Calculating the nutritional content of school menus can be one way to ensure quality and document the nutritional content of school meals. Another way is to use the recommendations on pages 24–29, which are based on the Nordic Nutrition Recommendations and the Swedish Food Agency's general dietary guidelines. You can also use the tool SkolmatSverige, which has been developed for quality assurance of school meals. The tool uses food-based criteria, similar to the Swedish Food Agency's guidelines for food choices.

For kitchens that have calculated the nutritional content in their menu, it is important that the calculated recipes are followed. Spices and other minor adjustments can often be made without affecting the nutritional content, but it is important to check changes and additions with the person who made the calculation. Details such as the choice of cooking fat, dairy product or amount of salt have an impact on the nutritional content of meals. It is important to have a good dialogue and collaboration between those who plan the menu and those who prepare the food.

Calculating the nutritional content of a menu

Schools and municipalities that perform quality assurance by means of nutritional calculations need expertise in the methodology and interpretation of the calculations. Some guidance on this can be found in the *Nordic Nutrition Recommendations 2012*, in the chapter entitled “Dietary Reference Values for nutrient intakes intended for dietary planning”.

A nutritional calculation should include everything that the pupil is offered – food, sauces and accompaniments such as fruit, vegetables, dressing, bread, fat spread and drinks. Preferably should meals fulfil the nutritional recommendations both with and without a drink, as many people choose to drink water. The nutritional calculation should be performed on all dishes served for at least four weeks.

For the nutritional calculation to provide reliable results, it is important that:

1. The calculation covers at least four consecutive weeks and shows the average energy and nutrient content of the lunches.
2. The nutritional content is calculated for at least the following: energy/portion (MJ or kcal), fat, saturated fat, polyunsaturated fat, carbohydrates, protein, fibre, vitamin C, vitamin D, folate, iron and salt.
3. The nutritional values for raw ingredients are primarily taken from the Swedish Food Agency's food database. All compound ingredients (prepared or semi-prepared products) should have product-specific nutritional information (at least for the nutrients specified in the point above).
4. Nutritional calculations are also performed for alternative dishes.
5. The nutritional value of special diets must be calculated separately if the protein source (e.g. fish, eggs or meat) is excluded or replaced by something that is not nutritionally equivalent.
6. The calculation program should take into account nutritional changes during cooking or, alternatively, list the ingredients in cooked form and quantity.
7. The calculation must include everything offered to the pupil, including all meal components. However, it is preferable for the meals to fulfil the nutritional recommendations both with and without a drink.
8. There are routines to ensure that the calculated menu and recipes are those actually served in the school.

Consumption measurements and other quality aspects

Regardless of how nutritional content is assessed and followed-up, it is important to monitor how much food pupils actually eat. Food is only useful if it actually makes it to the stomach. Schools should therefore regularly monitor how many people choose to eat in the school restaurant and how many eat a full portion of the food served.

Other aspects of meal quality can also be documented, such as the cafeteria environment and the time spent eating. Free tools to assess the different quality areas of school meals are available at www.skolmatsverige.se. This can also be done through self-assessments, measurements and pupil surveys.

Vegetarian food

Many people today eat more vegetarian food. Well-composed vegetarian food has a high nutritional content, and several studies show that vegetarians have a reduced risk of developing common diseases. This is why it is good for children to learn to enjoy different vegetarian dishes at an early age.

Vegetarian food is traditionally divided into different groups:

- Vegan food consists entirely of plant based foods without any animal products, i.e. no meat, fish, shellfish, dairy products, eggs or honey.
- Lacto-vegetarian food contains vegetables and dairy products.
- Lacto-ovo-vegetarian food contains vegetables, dairy products and also eggs.

Vegan diets, where all animal based foods are excluded, require a good knowledge of food and nutrients, careful planning and the use of fortified foods. Dietary supplements may also be needed. Vegan food often contains less energy, protein, iron, calcium, riboflavin (B2), and vitamin D, and often involves larger portion sizes than an animal-based menu. Vitamin B12 is only found in animal foods (eggs, milk, meat and fish), so fortified products or supplements are needed. Vegetable alternatives to milk, such as oat or soya drinks, should be fortified with calcium, selenium, riboflavin (B2), vitamin B12 and vitamin D.

If the school serves vegan food, it is important to have a good dialogue with the guardian and the pupil and to be clear that it is the guardian/pupil, and not the school, who is responsible for complementing the meals with dietary supplements.

With vegetarian food containing milk and eggs (lacto-ovo-vegetarian), it is easy to get enough protein, but it can be difficult to get enough iron. Milk and cheese are rich in protein, many minerals and vitamins, but are very low in iron. Good vegetable sources of iron are beans, lentils, peas, wholegrain products, fortified cereals and most dark green leafy vegetables, such as kale and spinach. For example, dishes such as bean patties provide significantly more iron than dishes with cheese as the main ingredient. Even snacks can easily become iron poor if they consist of a cheese

sandwich, for example. It is a good idea to vary with more iron-rich snacks, such as hummus (chickpea spread) or pasties filled with tofu (cheese product from soybeans). Iron absorbs better if you add something rich in vitamin C, such as vegetables, fruits and berries. Similarly, iron also absorbs better from bread that has risen for a long time, such as sourdough bread, and from legumes and seeds that have been soaked or sprouted.

Read more about planning vegetarian and vegan food on the Swedish Food Agency's website.

Things to consider when planning and cooking vegetarian meals

Replace meat and fish

Vegetarian food can easily become poor in iron unless beans, peas, lentils, tofu or other soya products are included.

Make sure the energy content is not too low

To avoid excessively large portions, it is good to offer both cooked and raw vegetables and to ensure that the food contains enough fat.

Even vegetarian food should have a good fat quality

Without fish on the menu, oils and other polyunsaturated fats become particularly important, especially those rich in omega-3 fatty acids, such as rapeseed oil.

Serve vitamin D-enriched foods

In an animal-free menu, it becomes even more important to choose vitamin D-enriched fats and vegetable drinks. Lacto-ovo vegetarians can also get vitamin D from fortified dairy products.

More information on vegetarian food for children is available on the Swedish Food Safety Agency's website.

Individual adaptations

Special diets based on medical needs

Schools are obliged to provide safe special diets for pupils with allergies, coeliac disease (gluten intolerance) and other hypersensitivities. Read more about safe special diets in the section *Safe meals*. Naturally, meals meeting special dietary requirements must also be tasty, nutritious and carefully prepared. It is important that the excluded foods are replaced with foods that provide the meal with roughly equivalent nutritional content.

Pupils with special dietary needs due to other conditions or diseases, such as diabetes or neuropsychiatric diagnoses, should receive individualised dietary advice from their healthcare provider. It is important that the school has a dialogue with the healthcare provider and parents. For pupils with neuropsychiatric diagnoses, an adaptation of the meal situation can also be relevant. The work should be based on a trusting collaboration between the school, guardians and pupil.

Pupils with weight problems should receive individualised advice from their healthcare provider. Special diets designed for weight loss should not be served to healthy, growing children unless specifically prescribed.

Requests for individually adapted meals other than for medical needs

Schools may also be faced with requests for individually adapted meals for reasons other than medical needs, for example for religious, ethical or quality reasons.

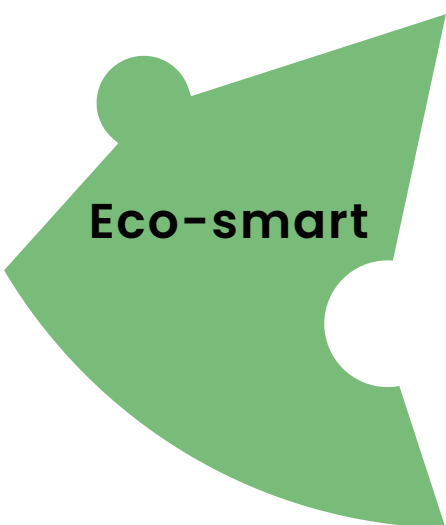
The Discrimination Act (2008:567) prohibits discrimination related to sex, transgender identity or expression, ethnicity, religion or other beliefs, disability, sexual orientation and age. Within the framework of its activities, the education provider needs to work preventive and promotional for non-discrimination and equal rights and opportunities. This means, among other things, that the school must offer a satisfactory alternative for pupils who requests food



adaptation related to a discrimination ground, such as religion or other beliefs. This could, for example, be some form of vegetarian option. Naturally, the adapted meal must also be tasty, nutritious and carefully prepared.

For requests for individually adapted meals for reasons other than medical need or reasons related to a discrimination ground, there is no clear framework for what the school is obliged to provide. Making individual adaptations to meals is a challenge for public meal services, which do not have the resources to accommodate all individual requests. The Swedish Food Agency recommends that each municipality and/or school decides how far, and in what way, it is possible to meet individual requests beyond what is regulated in legislation, based on the conditions in that particular organisation.

Good food choices at school – for health and the environment



More vegetables and fruit

Vegetables or fruit with every meal

Vegetables, fruit and berries are high in vitamins, minerals and other nutrients. Children who eat lots of vegetables and fruit often maintain these good habits into adulthood. This is why pupils should be served vegetables or fruit at every school meal, for example in a colourful and inviting salad bar. The selection should consist of at least five different components each day, including at least three fibre-rich vegetables, at least one legume and at least one salad vegetable or fruit.

Offer legumes

Beans, peas and lentils are rich in protein, B vitamins and iron – an eco-smart alternative to meat. This is why it is good for children and adolescents to learn to enjoy legume dishes from an early age. Legumes should not be served raw or half-cooked, as uncooked legumes contain lectins that can cause problems such as stomach ache.

Eco-smart choices

Fibre-rich vegetables such as root vegetables, cabbage and onions are an eco-smart choice. They have less climate impact than salad vegetables and can be stored longer. Sensitive fruits, vegetables and berries transported by air or long refrigerated journeys have a greater climate impact. It is therefore eco-smart to choose locally produced products in season.



More fish and shellfish

Fish at least once a week and fatty fish every second time

Children and adolescents who eat fish a couple of times a week, varying between fatty and lean varieties, are more likely to get the nutrients they need for a good health. Fatty fish, such as herring, salmon and mackerel, is particularly rich in polyunsaturated fats and vitamin D, which many children get too little of.

The Swedish Food Agency recommends that herring or other fatty fish from the Baltic Sea and the Gulf of Bothnia should not be served in schools, as they may contain high levels of environmental contaminants. Read more in the section *Safe meals*.

Eco-smart choices

Seafood is one of the few foods where the environment and health can be at conflict, since excessive consumption of certain species and stocks can lead to depletion. This is why it is important to choose sustainable products, i.e. fish and shellfish that come from stable stocks and are fished/farmed in a responsible way. It is also important to vary the choice of species – this reduces the pressure on a handful of species. There are various eco-labels and guides available for support, such as the WWF Seafood Guide.



Get help from the Keyhole!

The Keyhole is the Swedish Food Agency's symbol that makes it easier to make healthy choices. It is found on foods that contain more fibre and whole grains, less sugar and salt, and healthier or less fat. Food labelled with the Keyhole is suitable for both children and adults.

Keyhole-labelled foods must meet one or more of the above conditions. As different food groups contain different types and amounts of nutrients, the requirements differ for each group – breakfast cereals are compared to breakfast cereals and sausages to sausages. The Keyhole is a voluntary label and therefore there may be foods that meet the criteria without the label. Read more about the Keyhole criteria in the regulations (LIVSFS 2015:1).



Switch to whole grains

Replace white flour with wholegrain flour

Wholegrain varieties of pasta, rice, bulgur, bread and other cereals are more nutritious because no parts of the grains are sifted out. Whole grains may also reduce the risk of cardiovascular disease, diabetes, obesity and some cancers.

Offer wholegrain bread instead of white bread and vary with wholegrain rice and pasta from time to time. This way, the school gives pupils the opportunity to learn to enjoy whole grains.

Eco-smart choices

Rice grown on waterlogged land emits relatively high levels of greenhouse gases, and therefore has a greater impact on the climate than cereals and potatoes. Cereals that have been sprayed less or not at all, such as organic alternatives, contribute to a non-toxic environment.



Switch to healthy fats

Make room for healthy fats

Children and adolescents need fat, but the right kind of fat. Oils and other Keyhole-labelled cooking fats contain unsaturated fats that many children and adolescents need to eat more of. Even high-fat products, with a high proportion of unsaturated fat, may carry the Keyhole label. Rapeseed oil contains the particularly beneficial omega-3 fat that the body cannot produce itself. The saturated fat is less beneficial and is found in for example butter and butter-based cooking fats. A school that wants to use a butter-based fat can still achieve a good total balance, for example by reducing the amount of high-fat processed meat and dairy products and increasing the amount of fish and rapeseed oil. Use cooking fats enriched with vitamin D.

Eco-smart choices

Rapeseed oil and olive oil generally have less impact on the environment than palm oil, which is found in some cooking fats as well as many other products. This is clear from the list of ingredients. There are some certified oil palm farms where cultivation is more sustainable. Butter has a greater impact on the climate than oils, but can on the other hand contribute to a rich agricultural landscape and biodiversity.



Switch to unsweetened and low-fat dairy products

Choose unsweetened and low-fat varieties enriched with vitamin D

To reduce sugar and saturated fat intake, unsweetened and low-fat dairy products are recommended. Yoghurt or soured milk can instead be flavoured with fresh or frozen fruits and berries. Skimmed milk contains as much nutrition as full-fat milk, but less saturated fat. A school that wants to serve high-fat milk or use cream in cooking can compensate for this by, for example, replacing one sausage dish per month with fatty fish and serve more vegetable-based sauces instead of cream and cheese sauces and gratins.

All vegetable alternatives to milk, such as oat or soya drinks, should be unsweetened and fortified with calcium, selenium, riboflavin (vitamin B2), vitamin B12 and vitamin D. If the school serves rice drinks, vary with other fortified vegetable drinks, as rice products can contain high levels of arsenic. Read more about rice products in the section *Safe meals*.

Eco-smart choices

Dairy products come from cows that emit methane gas, which is bad for the climate. However, grazing animals can make a contribution to the environment – in Sweden, for example, they contribute to a rich agricultural landscape and keep natural pastures open. This benefits many endangered species.



Beverages

The choice of drink should be based on what else is served and the pupils' eating habits. Water is a good drink together with the meal. Milk can also be a good drink, but if milk or other dairy products are used for breakfast, snacks and during meals, it is sometimes redundant. Dairy products contain many important vitamins and minerals, especially calcium. Depending on what else the pupil eats, for example cheese, 2–5 decilitres of soured milk, yoghurt and milk per day is enough to provide sufficient calcium.

However, children who for various reasons do not eat enough of the cooked food can get a good energy and nutritional boost from a glass of milk.



Less red and processed meat

Keep the amount of red meat down, choose meat with care and limit the amount of processed meat

Reducing the amount of red and processed meat is good for both health and the environment. Meat provides many nutrients and is an important source of iron, especially for children and adolescents. At the same time, red meat, and especially processed meat, has been linked to an increased risk of certain cancers, and processed meat products are often high in salt and saturated fat. The Swedish Food Agency therefore has a general recommendation to limit the amount of cooked red meat and processed meat to a maximum of 500 grams per week. As little as possible of that amount should be processed meat. This recommendation applies to both adults and children. Schools should therefore also limit the amount of red meat and especially the amount of processed meat.

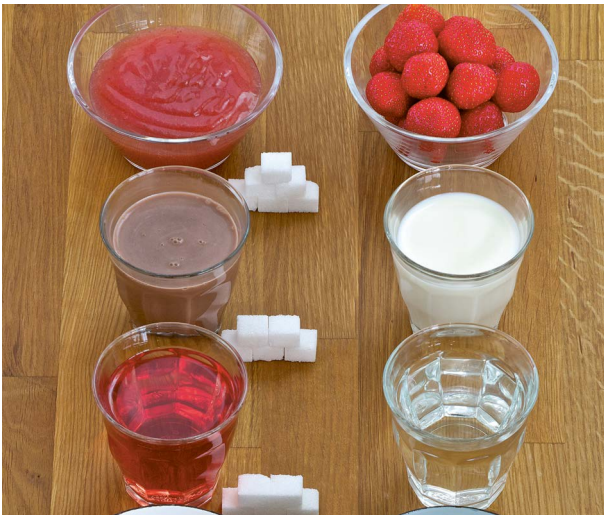
One way to reduce the amount of red and processed meat is to serve more vegetarian food, eggs, fish or poultry. Or serve meat just as often but in smaller quantities. For example, add beans, chickpeas or lentils to fill up your meat sauce or stew. They provide iron, protein and other essential nutrients, but have only a fraction of the climate impact compared to meat. When processed meat is served, choose products that are high

in nutrients, such as black pudding, which is high in iron. Instead of serving ham or sausage on the sandwich, try hummus (chickpea spread), mackerel, eggs and vegetarian pâtés.

Eco-smart choices

Choose meat carefully, as it has the highest impact on the climate and the environment. If the amount of meat is reduced, the budget can be used for meat that is produced in a more sustainable way and with greater consideration for the animals. Cows emit methane gas, which is negative for the climate. At the same time, grazing animals can make a contribution to the environment – in Sweden, for example, they contribute to a rich agricultural landscape and keep natural pastures open. This benefits many endangered species. However, different types of meat have different impact on the environment. Read more in the section *Eco-smart meals*.

Red meat is meat from beef, pork, lamb, reindeer and game. Processed meat is meat (including poultry) that has been smoked, treated with nitrite or otherwise preserved. Examples include sausages, bacon, kassler (cured and smoked pork), smoked ham, salami, liver pâté and black pudding.



Less sugar

Avoid serving foods high in sugar

Schools should not serve foods high in sugar, such as fruit syrups, soft drinks, sweets, ice cream and cookies. These types of foods are high in energy but are mostly “empty calories”. Pupils who eat and drink a lot of sweets may find it difficult to get the essential vitamins and minerals their bodies need. Sugar and between-meal snacking also increase the risk of tooth decay. Holidays can be celebrated in many different ways without sweets. Sweetened yoghurt, sweet cereals, fruit creams and fruit soups can also be high in sugar. Read the ingredients list.

Foods sweetened with sweeteners do not provide energy from sugar, but usually do not provide nutrients either. There is no need to get used to sweet flavours, whether from sweeteners or sugar, from an early age.

Although sugar should be kept to a minimum, a well-planned menu can include ketchup or lingonberry jam as an accompaniment to dishes such as meatballs or black pudding.

Eco-smart choices

The production of sugar, sweets and soft drinks has an impact on the environment, but provides little or no nutrition.



Less salt

Choose foods with less salt and use little salt when cooking

Many children, adolescents and adults consume more salt than is good for their health. Salt is a matter of habit. It is therefore important that pupils do not become accustomed to too much salt in their food. Most of the salt in food comes from meat and processed meat products, bread, cheese and ready meals. Foods that fulfil the Keyhole criteria contain less salt.

Use very little salt when cooking. Fresh herbs, garlic, ginger, chilli, lemon and lime are examples of flavour enhancers that can replace salt to some extent. Some ingredients are already high in salt, such as stock, soy sauce and some spice mixes. Preferably use low-salt stocks. It is not advisable to have salt and spice mixes with salt available for pupils.

Use iodised salt

The salt used should be iodised. Iodine is needed for the body's metabolism. But you do not need large amounts of salt to get enough iodine.



Good breakfasts and snacks

Breakfast and snacks are important for children and adolescents, as they contribute to a large part of the total nutrition and energy intake. This is why these meals also need to be nutritious, whether they are served at school, in the leisure time centre, on outings, or purchased in the cafeteria. For children who do not eat breakfast at home, it can be an advantage if the school provides breakfast in the morning.

To ensure that breakfast and snacks provide sufficient nutrition, they can be planned based on the three parts of the Plate Model:

- Bread and/or cereals or muesli.
- Protein-rich food (sandwich spread, dairy product or fortified vegetable drink/vegetable alternative to yoghurt).
- Vegetables and fruit.

If possible, use foods that meet the criteria for Keyhole labelling.

Do not serve sweet and nutrient-poor foods, such as sweetened yoghurt, fruit cream, rosehip soup, fruit syrup, ice cream or pastries as a breakfast or snack. They provide energy, but too much sugar and not enough nutrients.

Breakfast and snacks can be quite similar and usually do not vary as much as lunch and dinner. However, many variations can be made with different fruits, vegetables, breads and spreads.

Good meals in leisure time centres

Snacks are often easy to prepare and something that pupils can help with. It is a good opportunity to learn about food, hygiene and nutrients, while practising cooperation and taking responsibility for others. For many pupils, the snack is the first meal that they take responsibility for at home. Leisure time centres are well positioned to demonstrate what a good snack looks like and how it can be varied. Good role models and a positive approach to food and meals are contagious, and can encourage pupils to try new flavours. Breakfasts and snacks are also easy to use as part of the educational activities in the leisure time centre.

Even with snacks and breakfast, it is important that the meal is served in a pleasant way. Setting the table in a neat and appealing way shows that snacks are important for refilling the energy and have a moment to rest.

Just as in school kitchens, leisure time centres should also have procedures for safe food handling. This also applies to excursions. Read more about dividing responsibilities when complying with food law in the section *Documents governing the food services*.

During school holidays and in-service training days, leisure time centres are often also responsible for lunch. See previous sections for more information on planning and preparing tasty, integrated, pleasant, eco-smart, nutritious and safe lunches.

Good selection in the school cafeteria

A cafeteria can be valuable for pupils who attend school late in the day or who have not had breakfast in the morning before school. It is important that there is a healthy yet attractive selection for pupils to choose from in the cafeteria.

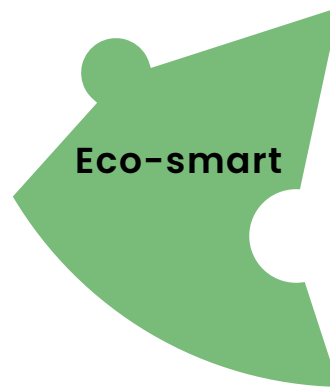
A good selection in the school cafeteria can consist of sandwiches, yoghurt, milk or fortified vegetable drinks, fruit, vegetables and smoothies. The cafeteria should not provide sweet drinks, sweets, ice cream, pastries or unhealthy snacks. There is very little space for such foods if the pupils are to get the nutrition they need. Whether the cafeteria runs by school staff, pupils or an external operator there should be guidelines for what to offer and not. The guidelines can be developed by the municipality or by the school organiser together with pupils, food service staff and educators. A school cafeteria must also comply with food law and have procedures in place to manage, prevent and address risks associated with meals. Read more in the section *Safe meals*.

School cafeteria opening hours

To ensure that as many pupils as possible eat the prepared school lunch, it is inappropriate for the school cafeteria to compete for diners at lunchtime. It is best if the cafeteria is closed during lunchtime, but open for pupils to buy breakfast and snacks in the morning and afternoon.



Eco-smart meals



Our food consumption has both a negative and positive impact on the environment – by making conscious choices and reducing food waste, school meals can contribute to a reduced environmental impact and good conditions for both humans and animals.

Eco-smart meals are meals that contribute to environmentally sustainable development in accordance with the national environmental objectives, for example by reducing the negative impact on the climate and biodiversity.



By making conscious choices and reducing food waste, school meals can help reduce environmental impact.

The environmental objectives

Which food is actually the most environmentally friendly? There are different answers to this question, as the food we eat affects the environment in different ways. The food we serve and eat has a direct or indirect impact on several of the UN's sustainability goals in the 2030 Agenda. In Sweden, Parliament has also decided on 16 national environmental quality objectives. Some of them are specifically linked to food consumption:

- A non-toxic environment – deals with the problem of dangerous chemical substances made by humans which, when spread, can threaten human health and the environment.
- Zero eutrophication – is linked to the leaking of nutrients from agriculture.
- A balanced marine environment, flourishing coastal areas and archipelagos – relates to stable fish stocks and fishing methods that do not harm the marine and archipelago environment.
- A varied agricultural landscape – is about preserving the soil's ability to produce food as well as biodiversity and cultural environments that can be linked to agricultural landscapes. Among other things, grazing animals are a prerequisite for preserving species-rich pastures and an open landscape.
- A rich diversity of plant and animal life – is about preserving and utilising biodiversity in a sustainable way.
- Reduced climate impact – is linked to greenhouse gas emissions from cattle ranching, commercial fertiliser production, deforestation, energy consumption, transportation, etc.





Eco-smart food choices

Food production affects the environment in different ways, both negatively and positively. Negative impacts include greenhouse gas emissions, eutrophication, depletion of fish stocks and the use of pesticides. But production can also have a positive effect on e.g. the agricultural landscape and biodiversity. Regardless of the wishes or preferences of pupils, it is often possible to reduce the environmental impact by making eco-friendly choices within each food group.

Some foods have a big impact on the environment, some have less. Generally speaking, it is good to increase the amount of plant-based foods and decrease the amount of animal-based foods to reduce the impact on the environment. Purchasing meat and fish with care for the environment and animal welfare, serving legumes, choosing shelf-stable fruit and vegetables and food grown with fewer pesticides can reduce the negative environmental impact of meals.

Meat is the food with the greatest impact on the climate and the environment. Cows and other ruminant animals emit methane gas, which has a negative impact on the climate. Meat production can also be detrimental to plant and animal life, for example if large areas of forest are cut down to make way for grazing animals and fodder cultivation. At the same time, grazing animals can make a contribution to the environment – in forest-rich countries like Sweden, they contribute to a rich agricultural landscape and keep pastures open, which benefits many endangered species.

For the environment, it is important to limit overall meat consumption and to choose meat and dairy products that are produced in a sustainable way and with consideration for the welfare of the animals. Good, nutritious alternatives to meat include legumes. There are several environmental-labels that indicate that the food has been produced with environmental considerations, such as natural pasture meat, ecological and climate certified. In comparison with other countries, Swedish meat and milk production rates well in terms of animal welfare, use of antibiotics and climate impact.



Fibre-rich vegetables such as root vegetables, cabbage and onions are an eco-smart choice. They have less climate impact than salad vegetables and can be stored longer. The same applies to legumes such as beans, peas and lentils. Swedish greenhouse vegetables now have a lower climate impact than before, as renewable fuels are increasingly used. Cultivation in greenhouses often means that significantly less pesticides are required than in open field cultivation. Organic farming does not use synthetic pesticides, which contributes to a non-toxic environment and favours biodiversity. Sensitive fruits, vegetables and berries transported by air or long refrigerated journeys have a greater climate impact. It is therefore eco-smart to choose what is in season locally.

Fish and shellfish are largely a wild resource, and some species are threatened by depletion. There are also fishing methods and farming practices that can harm the environment. This is why it is important to choose fish and shellfish that come from stable stocks and are fished or farmed in a responsible way. One way is to choose fish that fulfil the criteria of the MSC (Marine Stewardship Council), ASC (Aquaculture Stewardship Council), or the Krav eco-label.

Among cooking fats, rapeseed oil and olive oil generally have less impact on the environment than palm oil, which is found in some cooking fats as well as many other products.

Read more about the environmental impact of different food groups on the Swedish Food Agency's website.

Other important measures to reduce environmental impact include reducing energy use in the kitchen, coordinating transport as far as possible and requesting fossil-free means of transportation, striving to reduce the use of disposable items that cannot be recycled, and recycle waste.

Sustainable procurement

Every day, more than three million meals are served in the public sector. What is purchased and served therefore has a significant impact on diners, the environment, animals and producers. Increasing the proportion of food with a positive environmental impact and reducing the proportion with a negative environmental impact helps to achieve the UN's sustainability goals in the 2030 Agenda, the national environmental objectives, the National Food Strategy and the municipalities' own environmental objectives and food strategies.

Both private operators and public procurers have great freedom to take environmental considerations into account by formulating what properties the food purchased must have. The website of the National Agency for Public Procurement provides extensive support for procurement and purchasing, for example in the form of sustainability criteria with associated support for how the criteria can be verified and followed up. The sustainability criteria have been developed with regard to EU legislation, the Public Procurement Act and current practice in the field of procurement. The support can be used to take environmental, animal welfare and social conditions into account.

Similarly, nutritional requirements can be set taking inspiration from the Keyhole criteria. The requirements can then be verified using Keyhole labelling or equivalent evidence.

Less food waste – more food eaten

Food waste occurs throughout the food chain, and is food that is thrown away but could have been eaten if handled differently. One of the Sustainable Development Goals, number 12.3, is to cut food waste in half by 2030. Public kitchens are an important link in the chain to achieve this goal.

There are several reasons why reducing food waste is important:

- For the environment – producing food and then throwing it away is not sustainable. Then all the energy, water and land used to produce the food has gone to waste.
- For the food to be useful – reducing food waste in public meals is usually not about cooking less food, but about eating more of what is there.
- To avoid wasting limited resources – the money that is freed through reduced food waste can be used to improve the quality of meals and purchase higher quality food.

Working to reduce food waste in schools is important because food that is wasted could have been eaten instead, providing energy for development and learning.

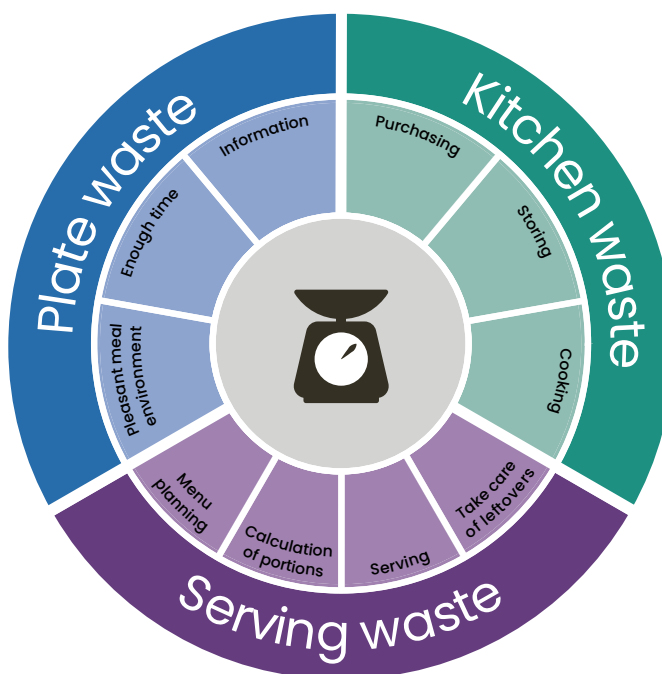
Reason for food waste in schools

The interventions that need to be implemented to reduce food waste vary depending on the organisation and conditions, but the basic principles are to have clear procedures, to cooperate and to work preventively.

Food waste can be divided into the following categories:

- *Kitchen waste* can occur in connection with purchasing, storage and cooking.
- *Serving waste* can occur, for example, when leftovers is not handled correctly.
- *Plate waste* is food left on the plate. Having a pleasant meal environment and allowing pupils to be involved in decisions about the meal are factors that affect plate waste.

A pleasant meal environment is a prerequisite for reducing food waste. A stressful environment and too little time to eat leads to both food waste in the serving area, as pupils do not have time to refill their food, and food waste from the plate, if the pupil does not have time and peace to finish the food.



Handbook for reducing food waste

To support the work on reducing food waste in schools, preschools, healthcare and social services, the Swedish Food Agency has created the Handbok för minskat matsvinn [*Handbook for reducing food waste*]. The handbook contains concrete suggestions of interventions to reduce food waste in the kitchen, when serving and the food that is scraped off the plate.

The first step in reducing food waste is to start measuring. What is measured is also visible. To ensure that everyone measures in the same way, the Swedish Food Agency has developed a national measurement method, which is included in the *Handbook for reducing food waste*. This contains information and support for how organisations can get started and perform food waste measurements.

Understand the difference between date labels to minimise food waste

The *best-before date* is a quality label. You can use food that has passed its best-before date, provided that the food is safe.

The *use-by date* indicates how long a food is safe to eat, and the food is considered to be good even on the use-by date.

Read more about date labels on the Swedish Food Agency's website.

What to do with food after "best before" or "use by" date?



Safe meals

It goes without saying that all food served at school must be safe to eat. Pupils should feel safe and not get sick from the food. It is important that staff are knowledgeable about food safety and that there are routines for how hazards should be handled, prevented and responded to, including when pupils are involved in food and meal preparation. Specific procedures are needed to ensure that pupils with allergies and hypersensitivities do not become ill from food.

Food law

By law, anyone who serves food to others is responsible for ensuring that the food is safe and that correct information is given to diners. It is the responsibility of the food business operator

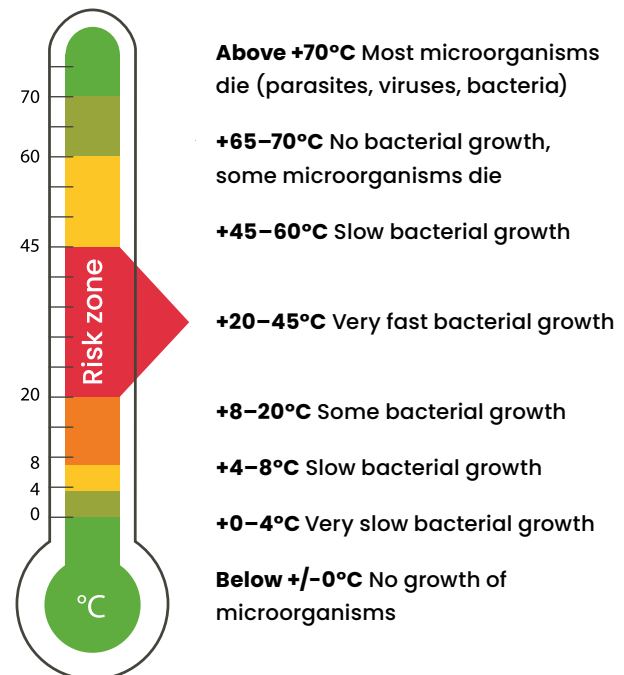


to ensure compliance with the requirements of food law. The business may be private or public. The food business operator is responsible for ensuring that the food is safe whether it is prepared by the kitchen staff or delivered from another organisation.

This responsibility includes allocating resources so that the staff concerned can develop their skills, and monitor that the organisation complies with rules and procedures. The industry guidelines *Offentlig säker mat* [Public safe food], published by the Swedish Association of Local Authorities and Regions, are designed to make it easy to control your own operations and comply with food law.

Here are some examples of hygiene routines that are important to follow

- Everyone who works or helps in the kitchen or with serving, pupils as well as adults, must be healthy and dressed appropriately. Just as it is important for adults, it is important for pupils to have clean hands.
- Make sure that cold food is cold (no more than +4°C) and hot food is kept sufficiently hot (at least +60°C). Most bacteria grow best at room temperature; see illustration. The heating time, temperature and cooling process are crucial for safety and hygiene as well as nutritional value and flavour.
- If pupils eat in the classroom, it is important, for example, to wipe down tables and benches both before and after the meal using appropriate equipment.
- Routines and facilities for hand washing before the meal should be available to pupils.





Pupils in the kitchen

Involving pupils in the kitchen is positive – it can be both educational and fun. There is nothing in the legislation that prevents pupils from being involved in meal-related activities or cooking in schools, but it is of course important that there are clear routines and systems in place for this too. Pupils helping in the kitchen need to meet the same requirements as the regular staff in terms of factors such as hygiene and clothing. It is important that everyone involved knows what is required to ensure that the food is safe. More information on diners in the kitchen can be found on the Swedish Food Agency's website.

Excursions and outdoor cooking

Pupils on a school excursion should receive food that is as good and safe as at school. Since the food served on an excursion may pose different risks than that served at school, the self-monitoring system should also include procedures for excursions and outdoor cooking. The food can be planned as part of the school's menu and, if possible, prepared outside by the school's kitchen staff or other staff with clear instructions. Staff should feel confident by following established safety and traceability routines. It is also important that there is a practical solution so that all food handlers can wash their hands. Food for pupils with allergies and hypersensitivities should be clearly labelled to avoid any confusion.

Visiting different organisations with animals is often a popular activity. The website of the Swedish Board of Agriculture provides information on what to keep in mind to prevent the spread of infections from animals to humans and from humans to animals.

Special diet meals for pupils with allergies and other hypersensitivities

Pupils with allergies, coeliac disease (gluten intolerance) or other hypersensitivities have the right to food that they can safely eat without risking illness. Being allergic or intolerant to food means that you are not able to eat food that most people can eat. The substance that the body reacts to is often referred to as an allergen. See the most common conditions in the list below.

Allergy

Causative substances/allergens

Specific proteins in food (such as milk, eggs, fish, shellfish, peanuts, soya, nuts, seeds and wheat).

Symptoms

The most common symptoms are abdominal pain, vomiting, diarrhoea, skin rashes and asthma. A life-threatening condition called allergic shock can occur. Stunted growth may also be a symptom.

Coeliac disease (gluten intolerance)

Causative substances/allergens

Gluten found in wheat, rye, barley and dinkel (spelt). Regular oats are usually contaminated with gluten (specialised gluten-free oats are available).

Symptoms

Gluten induce an inflammation and damage the small intestine for a person with coeliac disease. It may cause symptoms related to malnutrition, such as stunted growth and fatigue. Acute conditions may include abdominal pain, vomiting and diarrhoea.

Lactose intolerance

Causative substances/allergens

Lactose (milk sugar)

Symptoms

Abdominal pain, gas, diarrhoea.

It is important that pupils with an allergy or hypersensitivity are correctly diagnosed so that the right foods are avoided. Schools are not required to request a medical certificate for all special dietary requirements, but it can be a way to determine whether the special diet is medically justified.

For example, coeliac disease is a lifelong condition, while many children outgrow milk and egg allergies. An updated medical certificate can therefore be important to provide information on whether the child still has the allergy or has outgrown it.



Distinguishing between milk protein allergy and lactose intolerance

Milk protein allergy and lactose intolerance are two completely different diagnoses. People who are lactose intolerant are not able to break down the carbohydrates in milk (lactose), while people with a milk protein allergy cannot tolerate the proteins in milk. In hard cheese and lactose-free milk, there is almost no lactose left but there is a lot of milk protein.

A person with a milk protein allergy should therefore never be served lactose-free milk, cheese or any other form of milk. If an allergic person ingests what they cannot tolerate, it can cause very serious and, in the worst case, life-threatening symptoms. Even very small amounts, such as a drop of milk, can cause a reaction in people allergic to milk protein. Most people with lactose intolerance can tolerate the amount of lactose in one decilitre of milk.

Planning for special diets

Schools should have procedures in place to ensure that pupils with allergies and hypersensitivities get the right food. It is important that the person responsible for the special diet has expertise in this area and receives regular training. Many allergenic ingredients that can cause hypersensitivity or allergy are handled at school meals. It is therefore an advantage if all staff who handle and serve food at school have knowledge of food allergies and hypersensitivities. You should also consider involving the pupils. There is a risk that pupils with allergies and hypersensitivities feel anxious or singled out at mealtimes. Pupils with allergies and hypersensitivity have the same right to positive mealtime experiences as their peers.

The Swedish Food Agency recommends that nuts, almonds, peanuts and sesame seeds are not included as ingredients in school meals because they can cause severe reactions even in small amounts. Common staple foods with allergens, such as milk, eggs, fish and cereals, can also cause severe reactions in small amounts. It is therefore important to have careful routines in place to ensure that all pupils are fed the right foods.

The most common reason for pupils to react to allergens in food is that something goes wrong at the

point of serving, such as serving food containing milk or cheese to pupils with a milk allergy. It could also be that utensils have not been properly separated, resulting in contamination. If the special diet food gives rise to an allergic reaction, the organisation responsible (the food business operator) must inform the municipal food inspector responsible for inspecting the school's kitchen and, in serious cases, the Swedish Work Environment Authority. Guardians also have the right to make a report. The purpose of reporting is to investigate the causes, improve procedures and prevent it from happening again. It does not necessarily have to be the handling in the kitchen that has failed; it could be a fault in one of the raw ingredients. If the source of the allergen cannot be found in the food's list of ingredients, samples can be sent to the Swedish Food Agency for analysis to detect mislabelled foods.

Food claiming to be free of an allergen should not contain it in such a level that an allergic or hypersensitive person reacts to the food. There are specific limits for gluten- and lactose-free foods. More information and interpretations of the rules can be found in the Swedish Food Agency's guide *Livsmedel särskilt avsedda för personer med allergi eller intolerans* [Foodstuffs intended specifically for people with allergies or intolerances] (2012).

Some key points to consider when planning meals for special diets

Be knowledgeable about the pupils' allergies and hypersensitivities

- Up-to-date information (e.g. certificates)
- Expertise and ongoing training

Be knowledgeable about the content of the food

- Recipes
- Lists of ingredients
- Purchasing
- Use original packaging/save packaging
- Label unpacked foods and ready-to-eat foods
- Avoid nuts, almonds, peanuts and sesame seeds in your food

Keep things separate and clean

- Protected storage of raw ingredients
- Dedicated or well-cleaned cooking surfaces and utensils
- Kitchen and machinery cleaned regularly
- Hand washing

Serve properly

- Clear information to pupils when serving
- Staff to ask
- Avoid special treatment of pupils
- Avoid contamination

Read more about allergy and hypersensitivity on the Swedish Food Agency's website.

Right information to the diners

Whether the food is intended for someone with an allergy or not, the person responsible for the meal must know and be able to provide information about the 14 most common allergenic ingredients in the food. Read more about the Food Information Regulation, which regulates this, on the Swedish Food Agency's website.

Avoid certain rice products due to the presence of arsenic

Rice cakes and vegetable drinks made from rice sometimes contain high levels of arsenic. The levels are not so high that they pose an acute risk, but arsenic is a substance that should be minimised. Children who regularly eat rice cakes or drink rice drinks are at risk of high intakes. Young children are more sensitive than older children and adults, so the Swedish Food Agency recommends that children under the age of six should avoid rice cakes and rice drinks. Schools can serve rice drinks to children over the age of six, but should vary this with other fortified vegetable drinks. However, schools should not serve rice cakes at all.

Ordinary rice can also contain arsenic, but the intake is usually lower than that from rice-based drinks and rice cakes. There is no reason to stop serving rice at school, but vary it with other carbohydrate sources such as potatoes, pasta and other types of grains. If rice is cooked in the same way as pasta, i.e. with a large excess of water which is then poured away, the arsenic content of the rice is reduced by more than half.



Do not serve herring

Fish contains many important nutrients and therefore many children and adolescents should eat more fish than they do today. Most, and the most common, food fish can be eaten frequently. However, fish from some areas may contain elevated levels of the environmental pollutants dioxin and PCBs. The Swedish Food Agency's recommendation is that children and adolescents should not eat these fish more often than 2–3 times a year. For this reason, the following fish should not be served at all in schools:

- Wild-caught salmon and trout from the Baltic Sea, the Gulf of Bothnia and its rivers, Lake Vänern and Lake Vättern.
- Herring from the Baltic Sea and the Gulf of Bothnia (The Swedish herring variants “strömming” and “sill” are the same fish species. Herring from south of Kalmar is called “sill”, while herring from north of Kalmar is called “strömming”).
- Wild-caught whitefish from Lake Vänern and Lake Vättern.
- Wild-caught char from Lake Vättern.

Additives in food

Some people are concerned about additives used in food, especially when it comes to children's food. All additives used in food are assessed by the European Food Safety Authority (EFSA). Only additives that are deemed safe for both children and adults, of value to the consumer, and necessary for the handling of the food are authorised.

EFSA also takes into account the combined effects of different additives when evaluating and authorising an additive. All additives must be declared on the packaging. What the different E-codes stand for can be found in the Swedish Food Agency's E-number key, which is available on the Swedish Food Agency's website.

Materials in contact with food



Materials that come into contact with food are regulated by legislation. This legislation aims to prevent the release of substances with unhealthy properties into food at levels that could pose a risk. If a product is

labelled with a glass/fork symbol and there is no further information on use, the product should be able to be used under all normal food contact conditions. This also applies to products that are clearly intended for food, such as a fork, even if they are not labelled.

However, for all containers and kitchen products, it is important to ensure that the material is used for its intended purpose and that any instructions are followed. For example, ice cream or jam containers are often made and tested specifically for ice cream and jam, and in some cases they may not be intended for repeated use.

You can read more about the safe use of different materials in kitchens and serving areas and the rules for materials in contact with food on the Swedish Food Agency's website.

Pesticides

Some people are concerned about pesticide residues in food. Like additives, pesticides must be carefully

tested and authorised before they are allowed to be used. The EU has strict rules on how pesticides can be used, and common upper limits on how much pesticide residue can remain in food. The use of chemicals must be sustainable and as low as possible. The upper limits are set to take into account the particular sensitivity of children, and there is a good safety margin between the amount that children are expected to ingest through food and the amounts that could cause health effects, even when several substances are present at the same time.

Thanks to Sweden's climate and the fact that fewer pesticides are used in cultivation, Swedish-grown food generally contains residues of fewer substances and at lower levels, making the safety margin even greater. In organic farming, only certain natural chemical substances may be used, which means there is an even greater margin of safety. More information on pesticides can be found on the Swedish Food Agency's website.



Documents governing food services

Legislation

Legislation in the food sector aims to ensure that the food served is safe and that no one is deceived by the food. The regulations impose requirements on everyone who handles food throughout the chain from farm to table.

The Education Act requires school meals in compulsory schools to be both free of charge and nutritious.

The natural or legal persons responsible for ensuring that the requirements of the two regulations are met are called food business operators in food law and school organisers in education legislation. The municipality or individual school organiser adapts the division of responsibilities to their organisation. It is important that there is a clear division of responsibility and work between the independent school's board and the person responsible for food and meals in the school, or the municipality's committee, administration, meal services manager and principal or other person with responsibility in the area of food and meals in the school.

The food business operator/school organiser can delegate tasks, but is always responsible for ensuring that the activities are carried out in compliance with the regulations. Anyone who has been delegated a task must know about it and have the mandate, knowledge and resources to carry out the task. It is important that the results of the follow-up of the food service operations are fed back to the responsible committee/board.

Food law – safety, honesty, and traceability in food handling practices

The purpose of the EU regulation, sometimes referred to as food law, *Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety*, is, among other things, to ensure a high level of protection of human health and consumer interests in relation to food (Article 1). Safety, honesty, i.e. not being deceived, and traceability are fundamental concepts in the legislation. Article 3 of Regulation (EC) No 178/2002 provides the following definitions:

- Food business: any undertaking, whether for profit or not and whether public or private, carrying out any of the activities related to any stage of production, processing and distribution of food.
- Food business operator: the natural or legal persons responsible for ensuring that the requirements of food law are met within the food business under their control.

Article 2.1 of Regulation (EC) 852/2004 on the hygiene of foodstuffs provides the following definition:

- Establishment: any unit of a food business.

For a municipal organisation, this means that one or more committees are food business operators and therefore responsible for ensuring compliance with food law. The kitchen in a preschool, compulsory school, upper-secondary school and leisure time centre is an example of an establishment in a food business. For independent schools, it is the limited liability company, the trading partnership or the sole trader who is the food business operator. In cases

where food service activities are procured from a contractor, it is often the contractor who is the food business operator. The food business operator must submit a notification of registration to the supervisory authority (environmental health committee or equivalent in the municipality). Each establishment must have a system of self-monitoring based on the hazards and risks of the activity. It must be adapted to the nature and scope of the activity and describe what is done to satisfy the requirements of the legislation. The responsibility also includes ensuring that staff have the knowledge and competence required to perform the work safely. The type and level of competence required is not specified in the regulations, but is assessed based on the activities and tasks. The supervisory authority's food inspectors check compliance with food legislation.

Read more in the industry guidelines *Offentlig säker mat*, published by the Swedish Association of Local Authorities and Regions and on the Swedish Food Agency's website.

Education Act (2010:800)

According to Chapter 1, Section 4, second paragraph of the Education Act, education shall take into account the different needs of pupils. Pupils shall be given support and stimulation so that they develop as much as possible. An endeavour shall be made to compensate for differences in the pupils' ability to benefit from the education. Chapter 1, Section 10 of the Education Act states that the best interests of the child shall be the starting point in all education and other activities under the Education Act. The term child refers to everyone under the age of 18. The child's viewpoint shall be clarified as far as possible. A child shall have the opportunity to freely express their views on all matters concerning them. The child's opinions shall be given importance in relation to the child's age and maturity. The preparatory work for the Education Act states that the influence of children and pupils relates, for example, to the cafeteria and thus also to meals (Government Bill 2009/10:165 page 312).

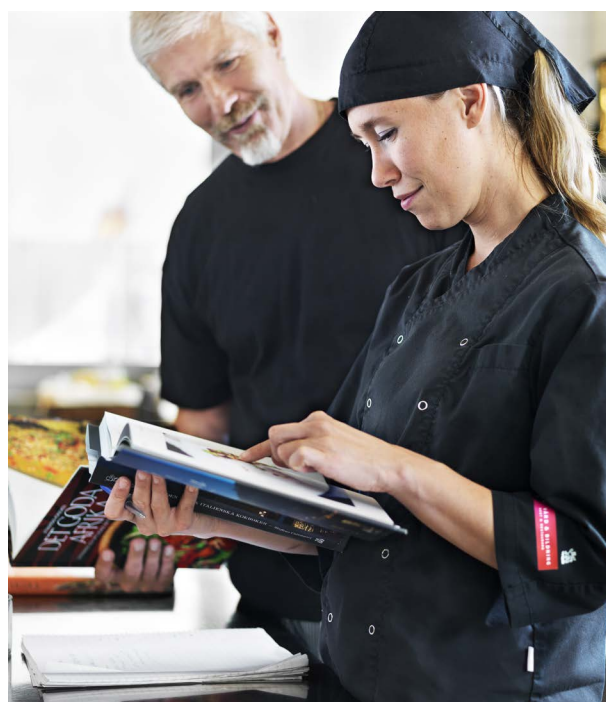
According to Chapter 1, Section 5 of the Education Act, education shall be designed in accordance with fundamental democratic values and human rights such as the inviolability of human life, the freedom and integrity of the individual, the equal value of all people, equality and solidarity between people.

Everyone working in education must promote human rights and actively combat all forms of victimisation. Education must rest on scientific grounds and proven experience.

The Education Act requires that meals in the compulsory school system shall be free of charge and nutritious (Education Act 2010:800; Compulsory school: Chapter 10, Section 10; Compulsory school for pupils with learning disabilities Chapter 11, Section 13; Compulsory special needs school: Chapter 12, Section 10; Sami school: Chapter 13, Section 10). The legal requirement applies to both public and independent schools. The supervisory authority is the Swedish Schools Inspectorate.

The Education Act does not specify the concept of nutritious. The Government has emphasised that the Swedish nutritional recommendations should be a starting point when assessing what is a nutritious meal and that "... it can be considered part of the curriculum's intentions that pupils have access to varied and nutritious food and eat lunch together with other pupils and adults" (Government Bill 2009/10:165, page 374).

Education in leisure time centres should be based on a holistic view of the pupil and the pupil's needs. The activities should be characterised by care for the individual. The concept of care includes serving meals to pupils (Chapter 14, Section 2 of the Education Act, Lgr 11).



Systematic quality management

According to the preparatory work for the Education Act, school meals are to be regarded as part of education (Government Bill 2009/10:165 page 872). This means that the Education Act's provisions on systematic quality management (Chapter 4, Section 3 of the Education Act) must also be applied with regard to nutritious school meals. Every school organiser in the school system must systematically and continuously plan, monitor and develop education at the organiser level. The Education Act also requires the systematic quality management to be documented (Chapter 4, Section 6). A nutritional calculation or other reliable nutritional assessment of the food served should therefore be part of the planning, implementation and follow-up of the quality of school meals. There are also good reasons for the school to include a description of the school's work with school meals as part of the quality management.

Curriculum for compulsory school Lgr 11

The curriculum for compulsory school (Lgr 11) states that the school shall be responsible for ensuring that every pupil, after completing compulsory school, “has obtained knowledge about and an understanding of the importance of the individual's own lifestyle and its impact on health, the environment and society”. School meals can be a valuable educational tool in the school's mission regarding lifestyle, environment and health. The school meal is also part of the school's social education, as it provides time for discussions about values and norms, and the opportunity to detect tendencies towards exclusion and pupils who are struggling.

The school curriculum also states that the internationalisation of Swedish society places high demands on people's ability to live with and recognise the values inherent in cultural diversity. The school is a social and cultural meeting place that can strengthen this ability. Meals can be used to stimulate curiosity about encounters between different food cultures, traditions and habits.

The Convention on the Rights of the Child

Since 1 January 2020, the Convention on the Rights of the Child has been enshrined in law. The UN

Convention on the Rights of the Child declares that the best interests of the child should always come first. All children and adolescents up to the age of 18 have the same rights, such as: to live and develop, grow up in safety, be protected from abuse, and be respected for what they think and feel. Children also have the right to adequate and nutritious food and clean drinking water, as well as nutrition education (Article 24(2) (c) and (e)).

Local governing documents

The municipality or school can decide on governing documents related to food and health – important documents in this context can be, for example, a public health plan or meal policy. Many people are affected by issues related to food in schools. The following plans and programmes must therefore be adapted to your own organisation.

Public health plan and meal policy programme

Most municipalities describe their public health objectives in a long-term public health plan, which is usually based on the national public health policy adopted by Parliament. The overall public health objective in Sweden is for society to create the conditions for good health on equal terms for the entire population.

For food, objective 10 of the public health proposal applies: good eating habits and safe food. An important prerequisite for achieving the objective is that many actors contribute. Many municipalities have a meal policy programme or a meal policy as a tool in the work related to objective 10.

The meal policy programme may also include the municipality's decision regarding the Government's objectives and direction for organic production and consumption, as well as measures to reduce food waste and the environmental impact of meals.

In addition to establishing goals and ambitions, it is important to clarify responsibilities and develop a plan for follow-up. A meal policy can clarify objectives in areas such as meal quality (e.g. nutritious, eco-smart, safe, tasty, pleasant and integrated) and organisation (competence, mandate, division of responsibilities).



Further information

Bra måltider i förskolan – hanteringsrapport, Swedish Food Agency 2016

Bedömning och dokumentation av näringsriktiga skolluncher – hanteringsrapport, Swedish Food Agency 2013

Barns matvanor ur ett sensoriskt och pedagogiskt perspektiv – en litteraturgenomgång. Swedish Food Agency report 11, 2016

Nordic Nutrition Recommendations 2012. Integrating nutrition and physical activity. 5th edition. Nord 2014:002. Nordic Council of Ministers, 2014

Nordiska näringsrekommendationer 2012 – rekommendationer om näring och fysisk aktivitet. Bakgrund, principer och användning. Swedish Food Agency, 2014

Hitta ditt sätt – att äta grönnare, lagom mycket och röra på dig, Swedish Food Agency, 2015

Råd om bra matvanor – risk- och nyttohanteringsrapport. Swedish Food Agency report 5, 2015

Bra livsmedelsval för barn 2 – 17 år – baserat på nordiska näringsrekommendationer 2012, Swedish Food Agency report 11, 2015

Handbok för minskat matsvinn – för verksamheter inom vård, skola och omsorg, Swedish Food Agency, 2020

Fler gör mer. Handlingsplan för minskat matsvinn 2030, Swedish Food Agency, Swedish Board of Agriculture, Swedish Environmental Protection Agency, 2018

Miljöpåverkan från animalieprodukter – kött, mjölk och ägg, Swedish Food Agency report 17, 2013

På väg mot miljöanpassade kostråd, Swedish Food Agency report 9, 2008

Svenska mervärden – kunskapsunderlag om mervärden inom svensk kött- och mjölkproduktion, Swedish Board of Agriculture, 2016

En livsmedelsstrategi för Sverige – fler jobb och hållbar tillväxt i hela landet, Government Offices of Sweden, 2017

Oorganisk arsenik i ris och risprodukter på den svenska marknaden. Del 3 – Riskhantering, Swedish Food Agency report 16, 2015

Information om livsmedel som inte är färdigförpackade. Information brochure, Swedish Food Agency

Industry guidelines *Offentlig säker mat*, published by the Swedish Association of Local Authorities and Regions and on the Swedish Food Agency's website.

Websites

Swedish Work Environment Authority www.av.se

Ombudsman for Children in Sweden
www.barnombudsmannen.se

National Board of Housing, Building and Planning
www.boverket.se

Equality Ombudsman www.do.se

Public Health Agency of Sweden
www.folkhalsomyndigheten.se

Swedish Board of Agriculture www.jordbruksverket.se

Swedish Food Agency www.livsmedelsverket.se

Swedish Environmental Protection Agency
www.naturvardsverket.se

National Agency for Education www.skolverket.se

Swedish Association of Local Authorities and Regions
www.skr.se

National Agency for Public Procurement
www.upphandlingsmyndigheten.se

www.miljomal.se

www.globalamalen.se

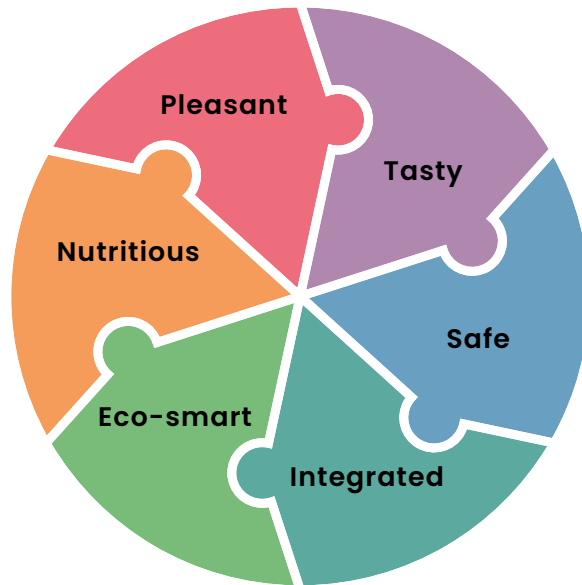
Reference values

Age-specific reference values for energy and nutrient content in an average school lunch, corresponding to 30 percent of the recommended daily intake (RDI) according to the Nordic Nutrition Recommendations 2012.

Age (years)		6–9	10–12	13–15	16–18
Energy per serving (MJ)	30 % of RDI (25–35%)	2,1 (1,7–2,4)	2,7 (2,2–3,1)	3,1 (2,5–3,6)	3,3 (2,7–3,8)
Energy per serving (kcal)	30 % of RDI (25–35%)	500 (415–580)	645 (535–750)	735 (610–855)	790 (655–920)
Fat (25–40 E%) (g)		14–22	18–29	21–33	22–36
Saturated fat and trans fat (max 10 E %) (g)	max	6	7	8	9
Polyunsaturated fat (5–10 E%) (g)		3–6	4–7	4–8	4–9
Carbohydrates (45–60 E%) (g)		55–73	71–95	81–108	87–116
Protein (10–20 E%) (g)		12–24	16–32	18–36	19–39
Fibre (g)		6	8	9	10
Vitamin C (mg)		12	15	23	23
Vitamin D (µg)		3,0	3,0	3,0	3,0
Folate (µg)		39	60	90	120
Iron (mg)		2,7	3,3	4,5	4,5
Salt (g)	max*	1,2	1,8	1,8	1,8

* Should be used as a guideline and long-term target, as it may be difficult to achieve in practice due to the current amount of salt in products. 1.8 g of salt corresponds to approximately 0.7 g of sodium.





Meal quality based on the Meal Model



GUIDELINES FOR TASTY MEALS

- The school restaurant has competent and committed staff with room for creativity and innovation.
- The meals are based on the needs and wishes of the diners.
- Pupils' curiosity and senses are aroused by colour, shape, smell, taste and a positive educational environment.
- The school restaurant offers several alternative dishes every day.
- The food is presented in an appealing and inclusive way.



GUIDELINES FOR INTEGRATED MEALS

- Mealtimes contribute to the school's educational mission and are used as a teaching tool.
- There is a consensus at the school about what an educational meal is and the role of adults at the meal.
- There is a trusting dialogue between diners and those who plan and prepare the food, where views and ideas are taken into account.
- The expertise of the staff in the school restaurant is used in teaching, through collaboration with the school's educators.
- The meals create a safe meeting place, social interaction and opportunities for dialogue.

Pleasant



GUIDELINES FOR PLEASANT MEALS

- School meals are scheduled so that all pupils have the opportunity to eat in a calm environment:
 - each pupil eats at approximately the same time each day
 - lunch is served between 11:00 and 13:00
- All pupils have at least 20 minutes to sit down and eat, in addition to time to take food and take their dirty dishes to the drop-off area.
- Pupils feel welcome, safe and are treated with respect in the school restaurant.
- The school restaurant is attractively designed and has well thought-out logistics.

Nutritious



GUIDELINES FOR NUTRITIOUS MEALS

- The school meals are planned based on the Nordic Nutrition Recommendations and provide about 30 percent of the pupils' daily energy and nutrient requirements.
- The daily lunch offering consists of
 - one or more hot dishes, including at least one vegetarian dish that everyone can eat
 - a salad bar with at least five different components
 - bread and fat spread(s)
 - water and possibly milk or fortified vegetable drinks.
- The school measures consumption and monitors how much of the food served ends up in pupils' stomachs.

Eco-smart



GUIDELINES FOR ECO-SMART MEALS

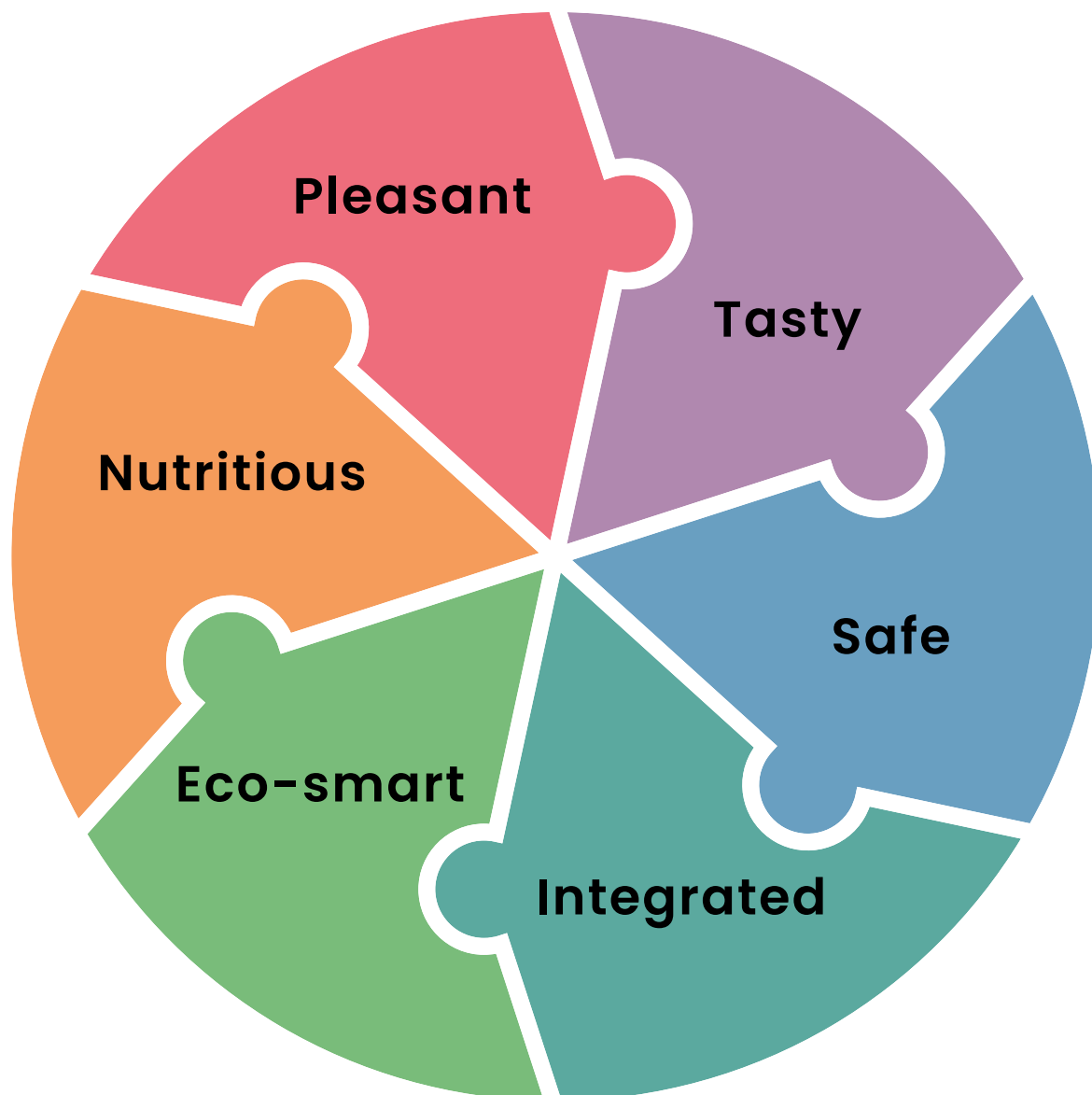
- Food waste in the kitchen, during serving, and from plates is minimised.
- The foodstuff chosen has been produced with the environment and animal welfare taken into account.
- Wild-caught fish purchased comes from stable stocks and has been fished with care for the environment.
- The proportion of meat is limited and replaced with other protein-rich foods.
- Storable fruit and vegetables are prioritised and varied by season.
- Waste is source-separated, and energy consumption and transport are minimised.

Safe



GUIDELINES FOR SAFE MEALS

- The school restaurant has knowledge of food safety and routines to manage risks.
- The right food is served to the right person – the kitchen has specific routines to ensure that pupils with allergies and hypersensitivities do not get sick from the food.
- Everyone in the kitchen, whether adult or pupil, is healthy and follows hygiene procedures.
- Cold food is kept cold, no more than +4°C, and hot food is kept sufficiently hot, at least +60°C.
- Staff are able to provide clear information about the contents of dishes when serving.



Meal quality based on the Meal Model

A meal is more than the food on the plate. It also includes factors such as the room, the company and the atmosphere. It is helpful if all school staff have a common understanding of what a good meal is.

The Meal Model provides a holistic approach to good meals and can be used in the planning and monitoring of public meals.



Livsmedelsverket
Swedish Food Agency

SWEDISH FOOD AGENCY
Box 622
SE - 751 26 Uppsala, Sweden
Telephone: +46 18 17 55 00
E-mail: livsmedelsverket@slv.se
www.livsmedelsverket.se