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Learning Resources for Students
(Workbooks and Activities)

Healthy Nutrition

1. LIVING

Are you familiar with the terms?

Food, food, food, diet, nutrients.
Proteins, Carbohydrates, Fats, Vitamins, Minerals, Trace elements

A) INTRODUCTION TO THE TOPIC (15 – 30 MIN).

The topic of **food** concerns all of us, because we have to eat and drink. Thanks to food, we have enough nutrients to survive and enough energy for everyday activities. But food also has a direct impact on our physical, mental and emotional health.

REMEMBER!

Food is one of the basic conditions of human existence (like water or air (oxygen)). The **function and purpose of food intake** is to supply energy and nutrients and to support the body's physical and mental tasks in all ways. Food consists of. Each food has its own energy and nutritional value.

Foods are substances that contain nutrients. They are of plant or animal origin. They are intended for human consumption in an unaltered, modified or processed state. Each food has a specific energy and nutritional value.

A meal is an assembly of food eaten at a particular time. E.g. breakfast, lunch, dinner.

Diet is the assembly of food and dishes for the nourishment of people.

Nutrition is the process of processing food in the digestive (gastrointestinal) tract of a person so that the various nutrients are used for the proper functioning of the body.

Nutrients (nutrients) are the nourishing substances present in food. Nutrients are essential for development, growth and all functions of the body.

Macronutrients (macronutrients) are a source of energy and are used to build body mass. They are proteins (proteins), carbohydrates and fats (lipids). Their daily intake is in grams.

Micronutrients are not a source of energy, but they are essential for the body. They are vitamins, minerals, trace elements and other substances. Their daily intake is in milligrams.

Proteins are the basic building material of tissues and organs, components of hormones, enzymes and protein substances. A total of **20 amino acids** form the structures of various proteins. Sources of protein are animal foods (meat, hy- dine, fish, milk and milk products, eggs) and plant foods (legumes, including soy, tofu and other soy products, cereals, nuts and seeds).

REMEMBER!

A sufficient and constant intake of dietary protein is essential for the body. A deficiency, but also an excessive intake of animal protein in particular, is not beneficial to health. Up **to two-thirds of the protein intake should be of vegetable origin**.

Carbohydrates are the main source of glucose, which is the most readily available and important source of energy for our bodies.

Simple sugars have a simple structure, are soluble in water, taste sweet. They are a quick source of energy and raise blood glucose levels very quickly. They occur naturally in food, e.g. in fruit and unsweetened milk. This includes table sugar, which we use to sweeten and which is obtained from beetroot and sugarcane. Most simple sugars are ingested by consuming a variety of industrially processed foods and sweetened beverages. This increases the risk of obesity, heart and blood vessel disease, diabetes, cancer and tooth decay. Their intake should therefore be limited.

Starches (polysaccharides) are complex carbohydrates, have a complex structure and do not have a sweet taste. They supply energy gradually and maintain a balanced blood glucose level. Their sources are plant foods such as cereals and cereal products (bread, pastries, pasta, porridge, cereal flakes), pseudo-cereals (buckwheat, quinoa), potatoes, rice, legumes, vegetables and fruit. Preference should be given to **whole-grain starchy foods** in the diet, which also contain fibre, vitamins, minerals and other beneficial components.

Dietary fibre is a collection of various carbohydrates that are difficult or indigestible in the digestive tract and are found only in plant foods. **Insoluble fibre** promotes bowel movement and improves bowel emptying. **Soluble fibre** forms a gel-like consistency on contact with water. Beneficial bacteria in the large intestine can digest (ferment) it, thus maintaining a healthy intestinal environment. Such fibre therefore has **prebiotic** effects.

REMEMBER!

Complex carbohydrates should predominate in a healthy diet, and the intake of simple sugars should be minimised.

All types of fibre are beneficial to health. The recommended daily intake of dietary fibre is 30 grams for both men and women. For children the amount is equal to their age + 5 grams per day.

Fats are the main source of energy for our body. They accumulate in adipose tissue, which serves as an energy store. However, excessive storage leads to obesity and is harmful to health. Fats also perform other tasks such as thermoregulation, vitamin absorption, hormone production and are a source of essential fatty acids. The essential components of fats are **fatty acids** and glycerol.

Saturated fatty acids are mainly found in animal fats, coconut and palm fat. They have a solid consistency. When consumed in excess, they are a health hazard and increase the risk of cardiovascular disease.

Unsaturated fatty acids are mainly found in vegetable oils, nuts, seeds and rice. They promote health and reduce the risk of cardiovascular disease.

The body cannot make **essential fatty acids** on its own and relies on dietary intake. The main source of essential **omega-6 fatty acids** is vegetable oils, especially sunflower oil. Rich sources of essential **omega-3 fatty** acids are flaxseeds, walnuts, rapeseed oil and fish oil.

Trans-fatty acids are harmful to health. They are mainly found in industrially processed foods.

REMEMBER!

The impact of fats on our health depends on their composition and the amount consumed.
In a healthy diet, fats with unsaturated fatty acids should predominate.

Vitamins, minerals and trace elements are micronutrients that the body needs to carry out a range of normal physiological functions. They are **essential substances** that we must take in from food

Vitamins are **fat-soluble** (vitamins A, D, E, K) or **water-soluble** (vitamin C and B vitamins). Minerals

include e.g. calcium, magnesium, sodium, potassium and others.

Important trace elements are e.g. iron, iodine, zinc, copper and others.

REMEMBER!

Vitamins, minerals and trace elements are essential for the functioning of the body. The body must receive them from food.

B) ACTIVITIES TO CHOOSE FROM (30 - 60 MIN.) + HOMEWORK

Activity 1:

Carousel of concepts - group brainstorming (12-14 years old)

What you need:

- ✓ A4 papers with key terms (food, food, food, diet, nutrients),
- ✓ pen, colored markers

1. Divide the pupils into five groups.
2. Each group gets one colour of pen or marker.
3. Post sheets of paper around the perimeter of the classroom with key terms.
4. Each group will stand by one of the sheets.
5. After starting, the group members write everything they can think of about the concept they have written on the paper.
6. After a time interval (2 min.), the group moves clockwise to the next sheet of paper.
7. The group writes on the sheet what the previous group did not write. The information should not be repeated.
8. After all the sheets have been passed, the group returns to its original sheet.
9. Together, check the information written on the sheet. You can tell which group wrote what by the different colours.
10. Cross out information that is listed twice on the paper.
11. Count the facts on each paper to see which group wrote how much. Evaluate the best group.

Activity 2:

Colour menus - homework or classwork (12-14 years old)

What you need:

- ✓ table – weekly meal schedule
- ✓ pen
- ✓ coloring pages

1. Your task is to complete the table according to how you have been eating all week:

Date	Breakfast	Dessert	Lunch	Olovrant	Dinner
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

2. In your chart, mark: food in red, food in green, food in yellow.
3. Discuss the colors you used and why.
4. Which day of the week do you think you eat healthy and which one do you eat unhealthy? Discuss this with your classmates.

Activity 3:

My shopping basket (10 - 12 years old)

What you need:

- ✓ paper
- ✓ pen

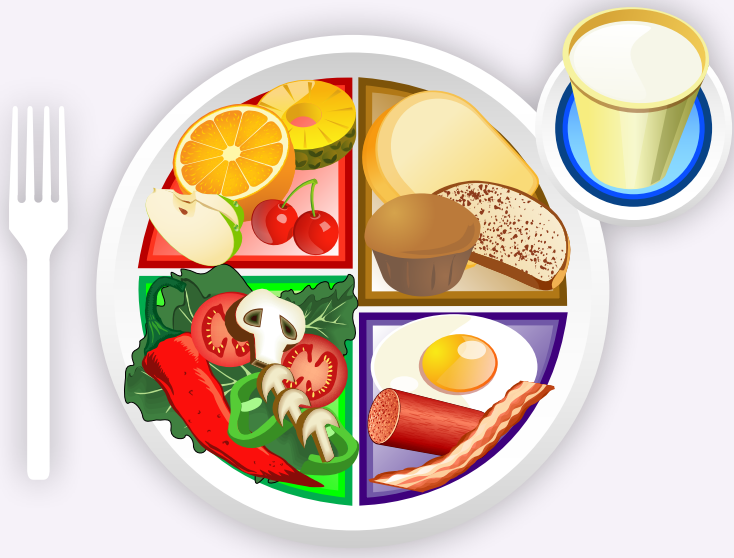
1. In your shopping cart, write down what your family normally buys at the grocery store.

2. Think and answer the questions:
   a) What's in your grocery cart?
   b) What's in your food shopping cart?
   c) Which things in your shopping cart can you make a meal out of?

3. Present your picture and answers to the questions in front of your classmates (max. 2-3 min.). Discuss the correctness of the terms in your shopping cart. Can you tell which food in your shopping cart is healthy and which is not?

Homework: Choose one day out of your week that you think you eat healthy that day. Prepare a short presentation in the form of a poster on A3 paper. Present your poster to your classmates in the next class and discuss whether your food is really healthy. Please note that your presentation should be no more than 2-3 minutes long.

(See picture of a properly loaded plate for inspiration)



2. FOOD AS A SOURCE OF ENERGY

Energy in numbers. Nutrients as a source of energy.
Energy balance and energy requirements.
How we take in and give out energy. My need for energy.

A) INTRODUCTION TO THE TOPIC (15 MIN.)

The human organism requires a constant **intake of energy** for its existence. **The sources of energy are the nutrients** in animal and plant foods and beverages. It is necessary for health that **energy intake** is **in balance with energy expenditure**.

We use the term "calories" to represent energy intake and expenditure, as well as the energy content of food and units of **kilocalories (kcal) or kilojoules (kJ)**.
1 kcal = 4.2 kJ (4.184 to be precise)

Energy balance is the relationship between total energy intake (calories taken in through food and drink) and total **energy expenditure** (calories used to meet the body's energy needs). This relationship determines whether our body weight decreases, increases or stays the same.

REMEMBER!

If we take in more energy from food than we need, the unused energy is stored as fat and leads to obesity and other related diseases.

For health, it is necessary to have a balanced intake and expenditure of energy, which contributes to a stable body weight.

Energy intake is the amount of energy the body takes in through food and drink. **Only macronutrients are sources of energy. About half of our daily energy intake should come from whole-grain starchy foods**, up to a maximum of one-third from fatty foods, and the rest from protein-rich foods.

The energy value of macronutrients varies:

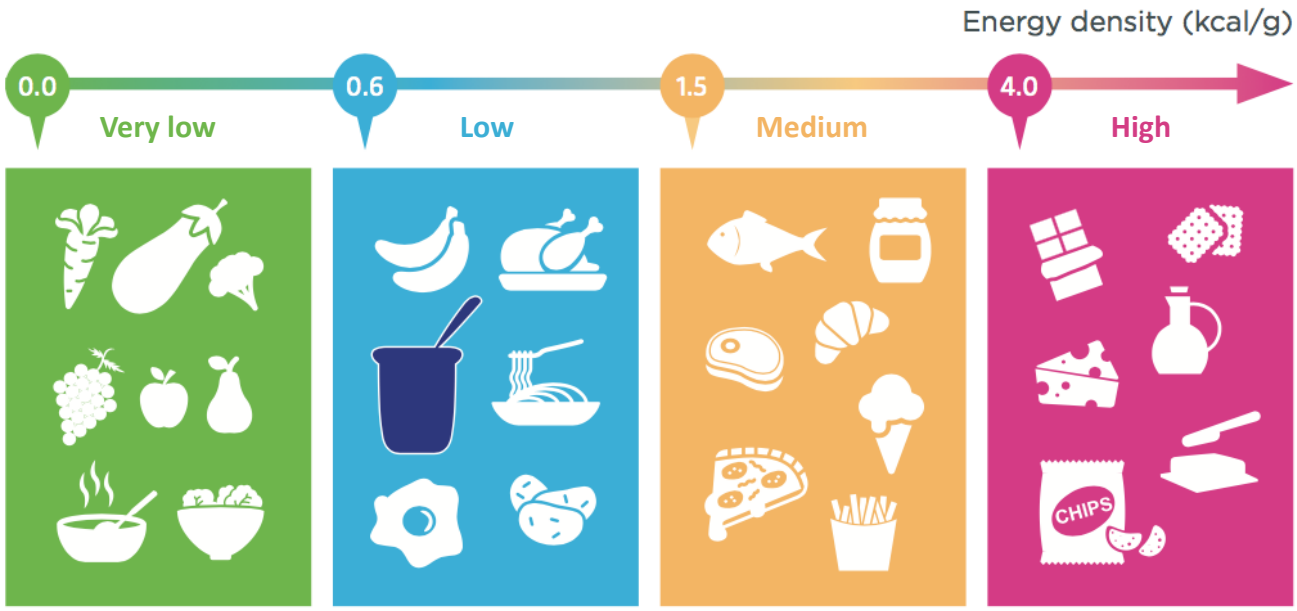
Protein	**1 gram = 4 kcal (17 kJ)**
Carbohydrates	**1 gram = 4 kcal (17 kJ)**
Fats	**1 gram = 9 kcal (37 kJ)**

Water (pure, unflavored) contains no calories.
Alcohol also contains energy (1 gram = 7 kcal/29 kJ). It is a harmful and addictive substance.

Every food and drink has its own energy and nutritional value. The energy value expresses the energy content, the nutritional value refers to the nutrient content of the food and drink. Foods and beverages with a **high energy value** (density, density) usually contain a lot of saturated fat, added sugars and salt (e.g. sweets, crisps, chips, mayonnaise, whipped cream, sweetened beverages, etc.), while foods with **lower energy value** are usually rich in water, fibre, vitamins, minerals and trace elements (e.g. fruit, vegetables, milk and dairy products, etc.).

REMEMBER!

Nutrient-dense foods can also be energy-dense, for example, vegetable oils, nuts, seeds, some dairy products and cereal products can have both a high energy density and a high nutritional value. Conversely, some low-energy foods, such as diet sodas, may be low in calories but usually contain no nutrients. They provide "empty" calories.



Energy density of food. Adapted from the British Nutrition Foundation's Feed yourself Fuller Chart 2009
Image Source: https://www.coachdannymatranga.com/blog/2020/3/11/the-best-kept-fat-loss-tool-eat-lots-and-still-lose-fat

The energy value of a food or beverage is most influenced by the proportion of water and fat. For example, 100 ml of full-fat milk contains 65 kcal (271 kJ), while 100 ml of low-fat milk contains 38 kcal (161 kJ).

The energy content of packaged foods and drinks can be found on their packaging. It is always given per 100g of food or per 100ml of drink or per serving. However, the portion we usually consume may be larger and we may take in more calories than the package states.

Nutrition facts per 100 g	
Energy value	905 kJ/216 kcal
Fats	3,8 g
Saturated fatty acids	1,9 g
Carbohydrates	37 g
Of which sugars	6,6 g
Protein	6,8 g
Salt	1,1 g

NUTRITIONAL VALUES FISH CONTENT		
	100 g of muesli contains on average	1 portion (40 g muesli + 60 ml whole milk
Energy value Energy	1 800 kJ 430 kcal	880 kJ 210 kcal
Protein	8,6 g	5,4 g
Carbohydrates of which sugar	65 g 25 g	29 g 13 g
Fats of us. fatty acids	15 g 5 g	8 g 3 g
Fibre	6g	2,5 g
Sodium	0,4 g	0,2 g
Vitamín B_1	0,3 mg (20 %*)	0,1 mg (7 %*)
Iron	3 mg (20 %*)	0,1 mg (7 %*)
Magnesium Magnesium	94 mg (30 %*)	45 mg (15 %*)

*) percent of the recommended daily allowance. Recalculated according to Souci-Fachmann-Kraut, 6th ed.

- **Energy expenditure** is the amount of energy our body uses in performing various physical acti viti es and body functi ons during the day. Energy expenditure consists of:
- **Basal metabolism** (60 – 75%). It is the energy to maintain basic bodily functi ons such as heart functi on, respirati on, body temperature, etc. It is the minimum amount of energy the body needs to survive.
- **Physical acti vity and movement** (10 – 30%). The more acti ve an individual is, the more energy he or she needs.
- **Thermal eff ect** (about 10%). It is the energy needed to digest food and nutrients. More energy is used to digest proteins, the least to digest fats. More energy is consumed if the diet is taken in several meals a day, not all at once.

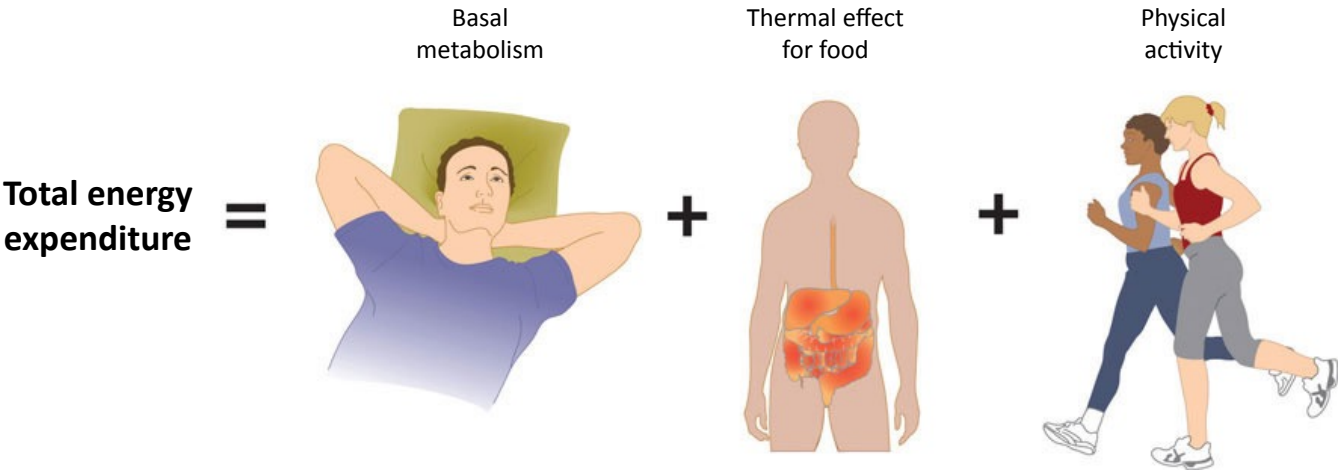


Image source: https://pressbooks.calstate.edu/nutritionandfitness/chapter/estimating-energy-expenditure/

REMEMBER!

If the goal is to lose weight, energy intake should be reduced and energy expenditure increased. This should be done under the control of a body-weight specialist, especially if children and adolescents are involved.

The need for energy is individual. It depends on several factors:

- Gender (more males than females).
- Age (more in the period of growth and development).
- Pregnancy and breastfeeding.
- Physical activity (work and sport).
- Body weight and body composition (more with a higher proportion of muscle).
- Medical conditions (special requirements for certain diseases).
- Weight control (targeted weight loss, weight gain, weight maintenance).

The estimated average daily energy demand is approximately:

Adults	Women 1 800 - 2 800 kcal Pregnant and breastfeeding 2 600 - 2 900 kcal Men 2 000 - 3 200 kcal
Children	1 200 - 1 800 kcal
Teens	Boys 1 600 - 2 600 kcal Girls 1 400 - 2 200 kcal
Older adults	Men 1 800 - 2 400 kcal Women 1 600 - 2 200 kcal

1 kcal = 4.2 kJ

These values depend on age and level of physical activity. Various formulas, online calculators or calorie tables are used for more accurate calculations.

REMEMBER!

Food should provide an adequate amount of energy (calories). Nutrient-dense foods should be consumed, not energy-dense foods. Regular food intake provides regular energy intake. Attention should be paid to the portion size and its energy value.

B) ACTIVITIES TO CHOOSE FROM (30 - 60 MIN.)

Activity 1:

Energy in my food (12-14 years)

Aids:

- ✓ table - weekly meal schedule
- ✓ pen

1. Using the website: www.kaloricketabulky.sk, www.kalorickétabulky.cz, https://www.foodpal-app.com/en/doplň do tabuľky energetickú hodnotu svojej desiatej

Date:

Food	Weight [g]	Protein [g]	Carbohy-drates [g]	Fats [g]	Energy [kJ]

2. Read what is the energy expenditure of a person in some actions.

   (The values in the table are indicative. An individual's energy expenditure depends on several factors such as body weight, age, sex, level of physical activity and metabolism. Because everyone is an individual, an exact number is difficult to determine without detailed information about a particular person.)

Activity	Energy expenditure [kJ] for a person weighing 60 kg
Sitting, TV, talking on the phone, reading	360
Walking on flat ground - 5 km/hr.	1 040
Run 9 km/hr.	2 010
Playing a common musical instrument	630
Home exercise	1 040
Volleyball	750
Swimming	1 360
Routine cleaning - vacuuming, housework, floor washing (most routine jobs)	630

3. Select from the table the activities you should perform to make your energy expenditure equal to your energy intake from your snack.

REMEMBER!

The range of estimated daily energy intake needs for the older children and adolescent categories is quite wide, depending on their level of physical activity. Boys have a higher need for caloric intake than girls. Energy expenditure also depends on lifestyle.

Sedentary lifestyle: involves only physical activity within the framework of manual life.

Moderate active lifestyle: involves physical activity equivalent to walking approximately 2.4 - 4.8 km a day at speed of 4.8 - 6.5 km/hr.

Active lifestyle: includes physical activity equivalent to walking more than 4.8 miles per hour per day at speed 4.8 to 3 to 4 miles per hour, in addition to the physical activity required by normal routine life.

Activity 2:

Energy shopping - homework, presentation of the project in class (10-14 years old)

What you need:

- ✓ table - weekly meal schedule
- ✓ pen

1. Pick one day to go shopping with your parents.
2. Choose five foods from the grocery store and write the energy values in a table on their packaging:

Food	Weight [g]	Protein [g]	Carbohy-drates [g]	Fats [g]	Energy [kJ]

3. From the foods listed in the table, try to prepare a meal that does not exceed an energy intake of between 1 400 and 3 200 kcal per day (6 000-13 400 kJ), which is the estimated energy intake requirement for an older child.

4. Prepare a poster with the packaging from your purchase and the recipe for the food you prepared. Present your poster in front of your classmates at school. The presentation should be no longer than 3 minutes.

3. FOODS AND FOOD GROUPS

Vegetables and fruits. Wholegrain cereals, pasta, rice and potatoes. Milk, dairy products and cheese. Meat, fish, eggs, pulses, nuts and plant seeds. Fats, oils and fats. Sugars and salt.

A) INTRODUCTION TO THE TOPIC (15 MIN)

Food, foodstuffs (e.g. coffee, tea, spices) and beverages are **ingestible substances**, i.e. substances intended to be eaten or drunk unchanged, modified or processed. They contain different nutrients and have different energy (calorie) contents.

Food groups are groups of foods and beverages that have similar nutrient composition and habitual consumption patterns. They are represented in the form of **food plates** or **pyramids**.

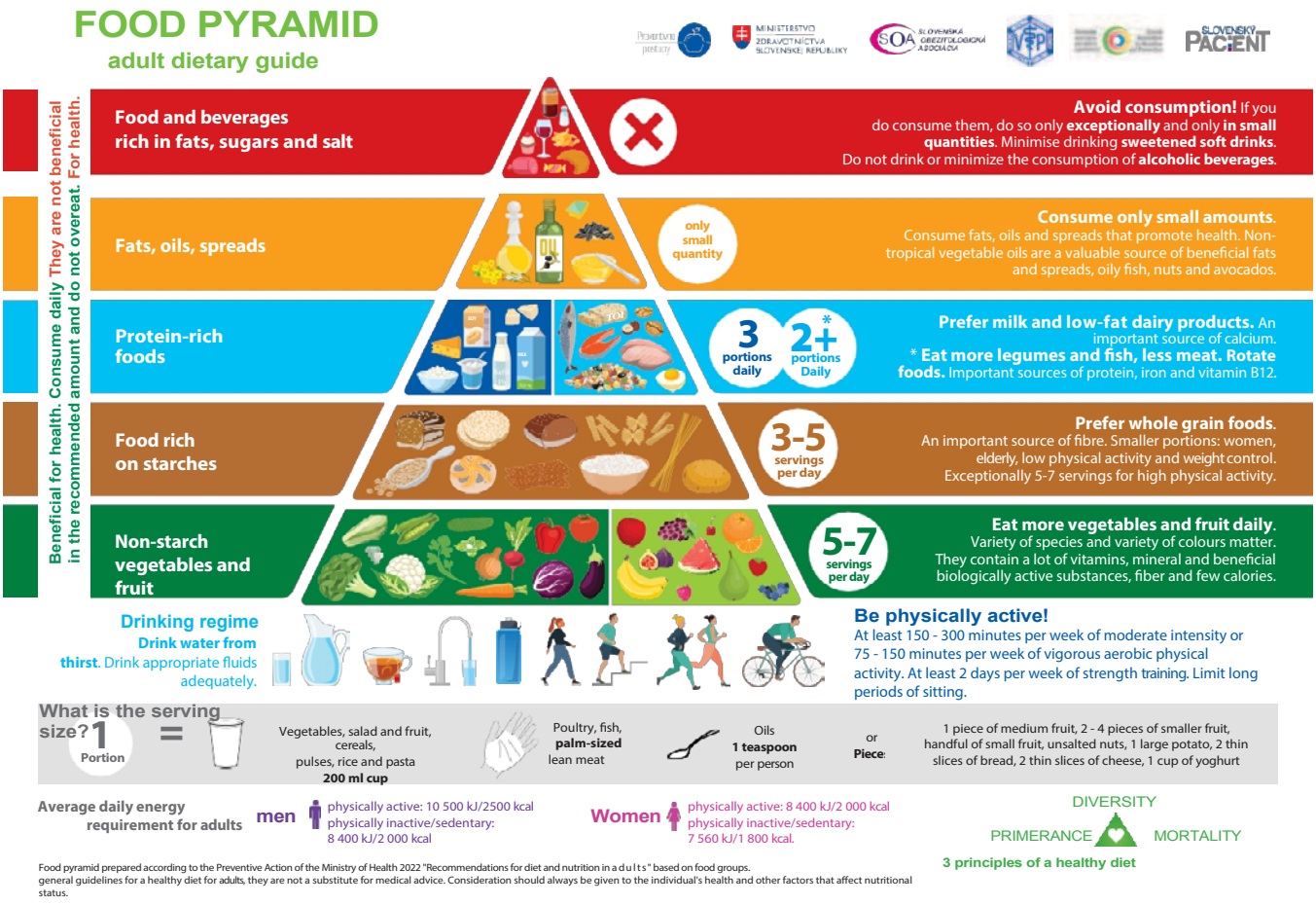
The food pyramid is a visual tool used to illustrate a balanced diet for a healthy lifestyle. It shows which foods should be prioritised in the diet, how much should be eaten and how often.

REMEMBER!

We need to eat a varied and balanced diet to avoid any deficiency, but also any excess of nutrients and energy. Do not overeat!

In this chapter, we will present the food pyramid and its groups, prepared by experts in Slovakia. The quantity and frequency of their consumption is discussed in the next chapter.

Vegetables and fruits. Wholegrain cereals, pasta, rice and potatoes. Milk, dairy products and cheese. Meat, fish, eggs, pulses, ...



Source : https://www.health.gov.sk/?Postupy-Prevencia

REMEMBER!

The food pyramid is a tool for healthy eating.
A varied selection of foods from the first four floors with appropriate frequency and adequate portion size provides sufficient nutrients and other important substances for healthy functioning of the body. Along with **physical activity, it** maintains an optimal body weight and thus reduces the risks of various diseases. Eating according to the food pyramid is also good for the planet.

VEGETABLES AND FRUIT

Vegetables and fruit form the base of the food pyramid. They are a rich source of vitamins, minerals, trace elements, fibre and other beneficial substances. They contain few calories, fruits slightly more than vegetables. They add colour and variety to a meal.
This group includes **non-starchy vegetables** (except potatoes, sweet potatoes and corn) and **fruits**.

- **One standard serving of vegetables** is 80 grams.
- **One standard serving of fruit** 150 grams.
- **The recommended daily consumption of vegetables** is 400 grams.
- **The recommended daily consumption of fruit** is 300 grams.
- **A maximum of one of the recommended 5 servings of vegetables and 2 servings of fruit per day** can be in the form:
  - ¾ cup (150 ml) unsweetened fruit juice or 100% juice
  - ²/₃ cup (130 ml) of fruit or vegetable smoothie
  - ½ cup (30 g) dried fruit

REMEMBER!

Eat vegetables and fruit daily. They should make up at least a third of your daily diet. Eat varied, colourful and, above all, fresh vegetables and fruit. Prefer seasonal and locally grown vegetables and fruit.

STARCH-RICH FOODS

Foods rich in starches (plant polysacharide) are the main source of energy. They have a good satiating effect. **Whole-grain starchy foods** contain **fibre**, vegetable protein, vitamins, minerals and trace elements. Fibre improves digestion, prevents constipation and various colon diseases.
This group includes **cereals** and **cereal products** (bread, bakery products, pasta, breakfast cereals without added sugar, oatmeal, porridge cereals), **rice**, **buckwheat**, **quinoa** and **starchy vegetables** (potatoes, sweet potatoes and maize).

REMEMBER!

Eat starch-rich foods daily, but in reasonable amounts. At least half of starch-rich foods should be whole grains.

PROTEIN-RICH FOODS

Milk and milk products

They are a **rich source of calcium**. In addition to protein, they also contain fats, carbohydrates, various vitamins and other minerals and trace elements.

This group includes **drinking milk** (cow's, goat's, sheep's), **milk products** (yoghurt, buttermilk, sour milk, rennet, kephir, kephir milk, cottage cheese, soft and hard cheeses) and **plant-based milk substitutes**

(these are analogues of milk drinks or yoghurts and cheeses made from plant sources, mainly soya.)
Their

composition differs from milk and milk products of animal origin. If they are fortified with calcium, they are a good source of calcium for people who cannot or do not want to consume milk and dairy products of animal origin).

The recommended number of servings for children and adolescents (5 – 18 years) is up to 5 servings per day. One standard serving means:

- Milk (drinking milk, sour milk, fortificated soy drink): 1 serving/1 cup (200 ml-250 ml)
- Yoghurt: 1 portion/ 1 crucible (125 g - 150 g)
- Cottage cheese, cottage cheese: 1 portion/ 1 crucible (75 - 125 g)
- Cheese: 1 portion/2 inches (25 g)
- Hard cheeses should be eaten infrequently and in small quantities because of their high fat and salt content.
- **Consume dairy products high in fat and sugar infrequently** - for example, as a dessert.

REMEMBER!

Milk and dairy products are an important source of calcium and protein. Prefer low-fat dairy products.
Consume low-fat, low-fat dairy products with no added sugar. Eat cheese in smaller quantities.

Meat, poultry, fish, eggs, pulses, nuts and seeds

All foods in this group, as well as milk and dairy products, are rich in high-quality protein and other beneficial substances such as iron, iodine and vitamin B12. You don't need to eat a lot of these foods, yet they keep you well fed.

This food group includes:

Legumes
Legumes (beans, lentils, peas, chickpeas) provide high quality vegetable protein and non-heme iron. They are low in fat and high in fibre. This includes soybean products (fermented e.g. tempeh, natto, yoghurt-like products and unfermented e.g. tofu).

Fish
They are rich in protein and iodine. Oily marine fish contain about 10% fat and are a good source of vitamin D and omega-3 fatty acids. It is important to eat a variety of fish, marine, freshwater and small fish (sardines with bones).

Poultry
It provides easily digestible protein and small amounts of iron. Prefer lean, low-fat meats.

Lean unprocessed red meat
It is pork, beef, lamb, goat, game and rabbit meat. It is a good source of protein, haem iron and B vitamins, especially B12. Prefer lean, low-fat meats.

Eggs
They are a good source of valuable protein. Egg white does not contain fat. The egg yolk also contains fat, fat-soluble vitamins, minerals and trace elements, carotenoids with antioxidizing effects and cholesterol.

Nuts and seeds
They are high in protein and fibre, beneficial unsaturated fats. However, they contain a lot of calories.

REMEMBER!

Eat more legumes, fish, nuts and less meat.
It is recommended to eat 350-500 g of cooked red me a t per week. Eating processed meat should be avoided altogether or only eaten exceptionally and in small quantities.
It is good for your health to eat a predominantly plant-based diet and supplement it with animal foods. Plant foods also have a lower environmental burden.

FATS, OILS, SPREADS

They are an important source of energy, essential fatty acids and fat-soluble vitamins. They can be of both plant and animal origin and have a solid or liquid consistency (oils). Other foods such as nuts, seeds, oily fish and avocados are also rich in fats.

All foods in this group are high in energy (calories) and excessive intake **contributes to obesity. They should therefore only be consumed in small quantities**.

Their composition (fatty acids) influences what effect they have on our health. **Vegetable oils (olive, rapeseed, sunflower and others) and fish oil contain unsaturated fatty acids and are beneficial to health.** Animal fats (e.g. butter, lard) and tropical vegetable fats (coconut fat, palm oil, palm kernel oil and coconut butter) contain mostly saturated fatty acids and should be consumed as little as possible.

REMEMBER!

Fats, oils and nuts should only be consumed in small quantities.
Preference should be given to those containing unsaturated fatty acids.

ATTENTION! FOODS RICH IN FATS, SUGARS AND SALT

The top of the pyramid is separated and shows foods and drinks that do not belong in a healthy diet. These are mostly a variety of **processed foods** that are **high in energy (calories), fat (saturated fatty acids and trans fatty acids), added sugars and salt**. They are low in fibre, vitamins, minerals and trace elements. Foods and beverages in this group contribute to obesity, tooth decay and other diseases.

This group includes, for example, packaged soups, sauces, frozen pizzas, ready meals, sausages, salami, chips, lemonades, biscuits, cakes, sweets and many others.

REMEMBER!

Foods and drinks that are high in calories, fat, added sugars and salt are not good for **your health**. This group includes many popular processed foods such as desserts, cakes, cookies, biscuits, soda, saltine crackers, potato chips, hamburgers, fried meat products, sweetened beverages, and many others.

If you do eat them, do so only occasionally and only in small quantities. Replace them with healthier options.

Source: https://www.heartfoundation.org.nz/about-us/news/blogs/five-ways-to-eat-less-processed-food

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Food pyramid plate (10-14 years old)

What you need:

✓ drawing/cardboard, glue, scissors, markers, food leaflets

1. Divide into groups.
2. As a group, talk about what the food pyramid is, what the levels are, what foods belong in it, and why.
3. Draw a large circle on the drawing/cardboard to represent the plate and cut it out.
4. Divide the plate into as many parts as the food pyramid has.
5. Cut out different types of food from each food group from the food leaflets.
6. Stick the food pictures on the food plate so that the foods that belong together are together. (The food plate serves as a good visual of how much of each food group the children should try to eat.)
7. When the plate is full, check that you have assigned the food to the correct group.
8. Present your work in front of your classmates and discuss whether you have filled the plate correctly. Are there foods in it that are unhealthy?

Activity 2:

Celebration menu (12 - 14 years)

What you need:

✓ pen, paper

1. Divide into two groups.
2. In each group, choose a captain, a spokesperson and a recorder.
3. The task of each group will be to design a menu for a children's birthday party.
4. Pupils in each group exchange opinions and review whether their menus are correct and whether and how much of the food from the food pyramid is included. Does their menu include junk food? How much? They will exchange their arguments and opinions about why they have designed their menus the way they have. They have 5 minutes to do this.
5. The group will choose one or two spokespersons to represent them in the debate. They shall agree on the arguments that the spokespersons will use to defend their point of view in the debate.
6. In the discussion, the groups will explain their views and give the most important arguments to support them. When the group spokespersons have given their opinion, the other group members can join in the discussion. The teacher makes sure that each group has the same amount of time.
7. The teacher asks the groups to summarise their views and arguments.
8. Next, we discuss with the pupils:
   - Did you find the arguments to support your position easy or difficult?
   - How did you find working in the group? Were your arguments respected?
   - Did you follow the principles of discussion - eye contact, paraphrasing, keeping time, not jumping into each other's speech?
   - Which arguments convinced you to change your diet?

4. FLUIDS, DRINKS AND DRINKING REGIME

Water in the human body. Daily drinking regime. Lack of liquids. Appropriate and inappropriate drinks. Monitoring and evaluation of the quantity and quality of liquids ingested during the day

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Water in the human body

Water is an important component of the human body and performs various functions.

The body maintains a balance between water intake and output. Water is constantly being excreted from the body, so we must constantly take it in.

We excrete water in the form of urine, faeces, breathing and sweating.

We take in water in the form of liquids/drinks, less in a water-rich diet, and a small amount of water is formed in the body itself.

Lack of liquids

Lack of water in the body (dehydration) is manifested by various symptoms. It is important to take enough liquids to prevent dehydration.

Daily drinking regime

The daily intake of liquids is referred to as the drinking regime.

It is important to have sufficient intake of liquids daily, but it is equally important that we take in appropriate fluids.

The daily intake of liquids should cover the body's needs in order to replenish water losses and prevent dehydration.

The daily water requirement for adolescents and adults is usually around 2 litres for girls and women and around 2.5 litres for boys and men. This amount is higher when the temperature outside is high, during sport or physical work, or with certain illnesses.

Liquids should be taken at regular intervals evenly throughout the day.

Appropriate and inappropriate drinks

The basis of a good daily drinking regime should consist of non-caloric liquids.

Suitable drinks for a proper drinking regime are:

- **Drinking tap water** is the most suitable beverage for a proper drinking regime.
- Complement a good drinking regime with lightly mineralised natural spring water or unsweetened or lightly carbonated soft drinks without sugar, unsweetened fruit, herbal, green or white tea.

100% fruit or vegetable juices are recommended to drink occasionally, no more than 100-150 ml and preferably diluted with water.

Room temperature drinks should be drunk; drinks that are too cold and carbonated (bubbly) or too hot are not suitable.

Inappropriate drinks for a proper drinking regime are:

- **Drinks with added sugar, such** as soft drinks and lemonades, fruit drinks, vitamin waters, energy and sports drinks. Their consumption increases the risk of obesity, tooth decay and other health problems.
- For children and adolescents, alcohol and any alcoholic beverages, caffeinated beverages, quinine, and heavily mineralized beverages are inappropriate.

http://graphics.straitstimes.com/STI/STIMEDIA/Interactives/2017/08/sugary-drinks-quiz/index.html

Consumption of such beverages should be minimized or avoided.

REMEMBER!

Water is an important component of the human body and performs various functions in it.
Lack of water in the body (dehydration) manifests itself in various symptoms. It is important to take in enough liquids to prevent dehydration. The daily water requirement for adolescents and adults is usually around 2 litres for girls and women and around 2.5 litres for boys and men. Drinking tap water is the most suitable beverage for a proper drinking regime. Drinks with added sugar, such as soft drinks and sodas, fruit drinks, vitamin waters, energy and sports drinks, should be minimized. Their consumption increases the risk of obesity, tooth decay and other health problems.

B) ACTIVITIES TO CHOOSE FROM (30 - 60 MIN.)

Activity 1:

Drinking regime. Do you follow it? (10 - 14 years)

What you need:

- ✓ drawing/carton
- ✓ glue
- ✓ scissors
- ✓ markers
- ✓ food leaflets

1. Divide into groups.
2. In a group, discuss what drinking is and answer questions:
   "When do you drink? How much do you drink? What do you drink?"
   Write down your answers on a piece of paper.
3. Think about it: Do you find it difficult to follow a drinking regime and "remember" to drink? How do you feel when you are running low on fluids?
4. Prepare a short presentation for your classmates on what is good/not good for their drinking and why. The presentation should be no more than 3 min.

Activity 2:

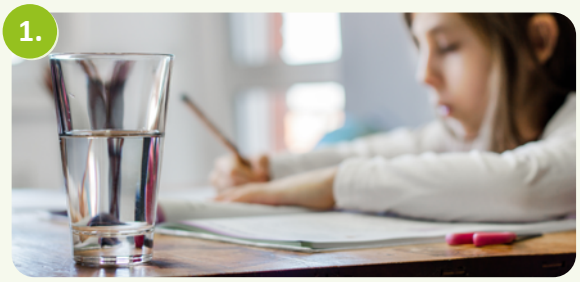
Water challenge (10 - 14 years)

What you need:

- ✓ pen
- ✓ paper
- ✓ Poster

1. Stick the enclosed poster with adhesive tape in a visible place (on the wall, fridge door, etc.).
2. Everyone chooses a colour to use, cuts out the drops and colours them with their colour.
3. Each time you drink a glass of water corresponding to a situation described in one of the boxes on the poster, place one of your drops on it. You can stick them with glue.
4. At the end of the day, count each student's drops. The pupil with the most drops wins "water challenge".
5. Who will win tomorrow?
6. Discussion with the teacher after completing a few days of the water challenge: " How did you feel before you started doing the water challenge? Did you feel better during the school day? Are you less tired?" Etc.

Image attachment: Drops of water 

1. 

„I'll drink a glass of water over break at school."

2. 

„When I eat my snack, I'll have a glass of water."

3. 

„When I wash my hands, I drink a glass of water."

4. 

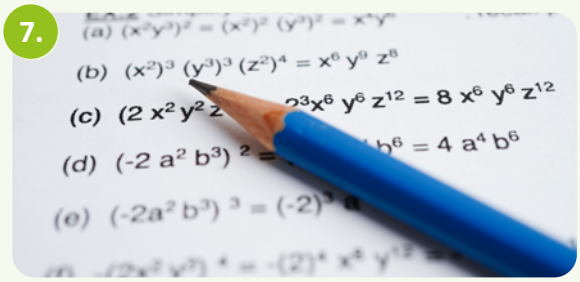
„When someone sings, I take a drink."

5. 

„If someone's mobile rings, I'll have a drink."

6. 

„I'll have a drink after PE class."

7. 

„After math class, I'll take a drink."

5. FOOD AND DRINK PORTIONS

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Guide and recommendations on correct portion sizes

The foods and beverages that belong to each food group should be consumed in adequate quantities to supply the body with sufficient nutrients and energy so that we have neither an excess nor a deficiency of nutrients.

Standard portions are used to express the appropriate amount to be consumed on a daily or weekly basis. The portion is defined by its size and number.

Portion size is expressed variously as bowl, cup, tablespoon and teaspoon or pieces, units of measure (grams, millilitres). Very simple and practical are hands, palms, fingers.

The size and number of portions are designed for a healthy adult and for a daily energy intake of 8 400 kJ/2 000 kcal. They may vary slightly depending on people's gender, age or physical activity.

The food pyramid shows **the size and number of portions of** food and beverages for the food groups.

How fruits, vegetables and salads should be eaten

Consume daily. They should make up at least a third of a full day's diet. Vegetables should make up a larger proportion. A variety of species should be eaten, the variety of species and colours matters. Local and seasonal species are suitable. Vegetables and fruit should be eaten fresh and whole or prepared in a gentle way (cooking, stewing).

5 servings of vegetables and 2 servings of fruit per day.

One serving of vegetables can be: 1 cup (200 ml) of leafy greens or half a cup of another vegetable (e.g., carrots, peas) or a piece (e.g., tomato, half a bell pepper, small cucumber).

One serving of fruit can be: 1 larger slice of fruit (pineapple, melon), 1 medium fruit (apple, pear, banana, orange), 2 smaller fruits (tangerines, plums), a handful of small fruits (raspberries, strawberries, blueberries).

A maximum of one serving a day can be like: three-quarters of a glass of unsweetened fruit juice or 100% juice, two-thirds of a glass of fruit or vegetable smoothie, half a glass of dried fruit.

How to eat wholemeal bread, cereals, pasta, rice and potatoes

Consume daily. At least half should be in whole grain form.

3 - 5 servings per day.

Smaller number for children, women, elderly people, at low physical activity. For physically active people and young men up to 6 - 7 servings per day.

One serving can be: 2 thin slices of bread, half a cup of dry oatmeal or unsweetened cereal, 1 cup of cooked rice, pasta or cereal (bulgur, couscous, polenta, quinoa), 1 cup of cooked cereal or corn chips, half a corn (grains), 2 medium or 4 small potatoes, 1 cup of sweet potatoes.

How to eat milk, dairy products and cheese

Consume daily. Prefer milk and sour milk products (yoghurt, sour milk) with lower fat content.

3 servings per day.

Children and adolescents up to 5 servings per day.

One serving can be: 1 cup (200 ml) of milk, sour milk or fortificated soy drink, 1 yogurt (125 grams flavored and sweetened, 150 grams natural with no added sugars), 1 third or half a package of cottage cheese, 2 inches of hand/2 slices of hard cheese.

How to eat meat, poultry, fish, eggs, legumes and nuts

Eat more fish and legumes, less meat. Foods from this group should be rotated.

2 servings per day.

One serving can be: a palm without fingers of cooked lean meat (beef, lamb, pork) and poultry, a palm with fingers of cooked fish, 2 eggs, a cup of cooked legumes or tofu, 40 g of unsalted nuts or seeds.

Per week this means: 2 servings of fish (including once of marine fatty fish), 2-3 servings of legumes, 2-3 servings of lean meat, 2-3 servings of poultry, 2-4 eggs, 2-3 servings of nuts or seeds.

Processed meat and meat products, especially red meat, should only be consumed occasionally and in small quantities. Limit the consumption of poultry meat in the form of nuggets, strips and other cured products.

How to eat fats, oils and nuts

Consume only in small quantities. Choose those whose composition (fatty acids) are beneficial for Health.

Limit fats with a predominance of saturated fatty acids (e.g. butter, lard, coconut fat, palm fat, etc.).

Prefer vegetable oils (e.g. olive, rapeseed, sunflower, etc.). The recommended serving is 1 teaspoon per person.

Prefer low-fat shrimp for eating. The recommended serving size is 10 grams, enough for 2 a slice of bread.

Homemade cottage cheese, legume or fish pickles or avocado are suitable for eating.

How to consume foods and drinks rich in fats, sugars and salt

They are not beneficial to health. It is recommended not to consume them at all or only in small quantities and only occasionally. Ideally, they should be replaced by more suitable and healthier foods.

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Smoothie after the training of an Olympic athlete

What you need:

- ✓ paper, pen, colouring pencils, glue, pictures of fruit and vegetables, photo of an athlete, internet

a) Pupils work individually or in pairs.
b) The pupils' task is to choose an Olympic athlete, glue his/her picture on a poster and write basic information about him/her, which they will look up on the Internet (e.g. height, weight, age, sporting achievements, country of origin, favourite food, etc.).
c) Let's assume that your selected athlete loses 1 000 g after each intensive training session. Athletes should try to replenish 150% of the lost mass by sweating.

Make a list of ingredients to make a smoothie to replenish lost energy. The list should include fruits, vegetables, but also carbohydrates and proteins. Use the Internet to find out how many grams of each ingredient on the list can be in the smoothie if the athlete is to replenish 2 g of protein and 1 g of carbohydrate. You can add ice or water so as not to affect the amount of nutrition the athlete has to take in.

Activity 2:

Guess the food (45 min.)

What you need:

✓ paper, pen, colouring pencils, tape, pictures of fruit, vegetables, cheese, meat, etc., internet

a) Cut out, print or draw pictures of food from a magazine and put them in a container: vegetables and fruit, whole grains, protein foods, etc.
b) Pupils take a picture out of the container one by one with their eyes closed. The other pupils look at the picture chosen by their classmate. Then the teacher tapes the picture on the pupil's back without him/her seeing it.
c) The pupil will then guess what food is stuck on his back. One by one, his classmates will start to give him information about the food that is stuck on his back.

   For example, if there is a carrot in the picture, the pupil can ask:
   Is the food orange?
   Is the food
   crunchy? Is the
   food long?

d) The pupil asks until he guesses the food. Pupils take turns until they have guessed all the food in the container.

Activity 3:

Evaluate your normal diet. See if you have been eating according to the pyramid during the day. Then prepare your diet according to the pyramid as it should look.

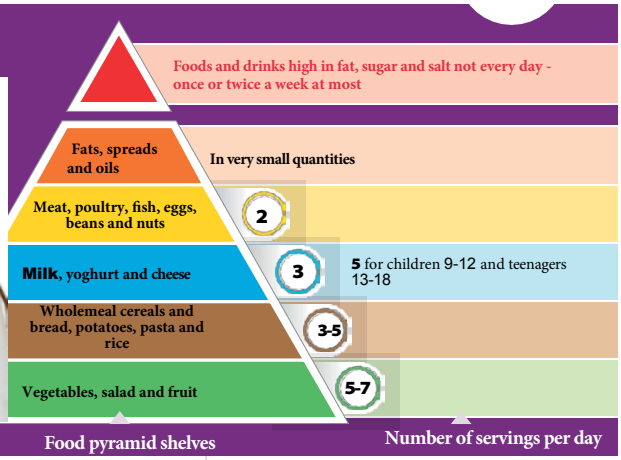
Think about whether you are eating healthily.

Take a look at the sample menu for one day.

Healthy food for life

Daily meal plan

Hanka is very active, she is 10 years old, she likes to dance. She needs 4 servings from the Whole Grain shelf cereals (bread, potatoes, pasta and rice). As a person aged 9 to 18, he needs 5 servings off the shelf for yoghurt, milk and cheese.



Breakfast

- 1 200 ml low-fat milk for cereal
- 1 2 wholemeal breakfast biscuits
- 1 Strawberries

Lunch

- 1 50g chicken
- 1 low-fat fruit yoghurt drink
- 1 2 thin slices of wholemeal bread
- 1 cucumber, iceberg lettuce, tomato

Dinner

- 1 75 g lean minced meat
- 1 200ml low fat milk 1 cup
- 1 pasta
- 1 carrot, onion, celery, canned tomato cooked in sauce

Dessert

- 1 25g semi-fat cheese
- 1 grape

Olovrant

- 1 apple

Evening snack

- 1 200 ml low-fat milk for cereal
- 1 1 cup whole wheat flakes
- 1 Banana

Healthy advice for every day

Drink at least 8 cups of fluids daily - water is best

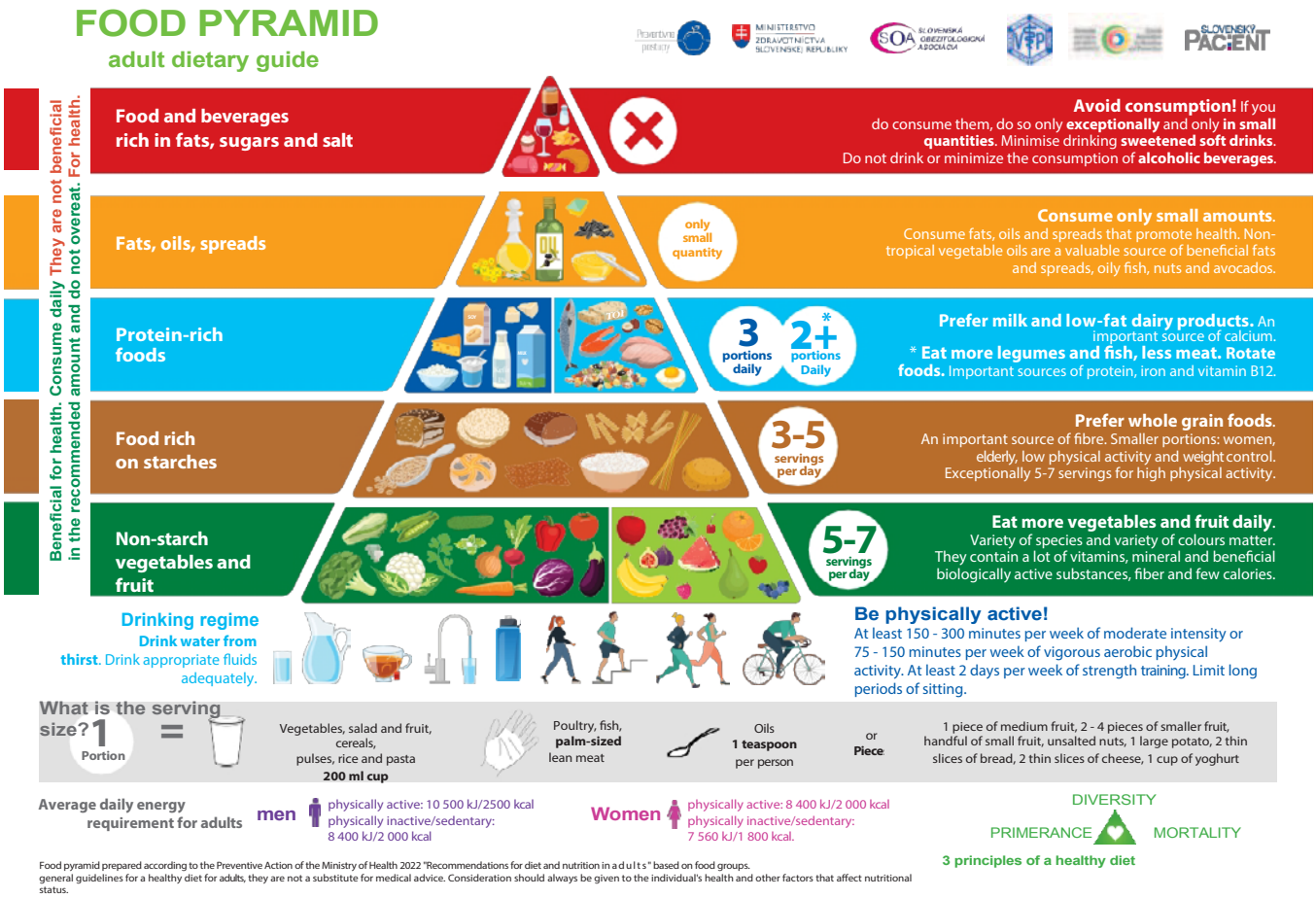
Be active!

Children must be active at a moderate to vigorous level for at east 60 minutes each day

Source : www.healthyireland.ie

REMEMBER!

Remember that your diet should be varied to get all the nutrients you need.



Source: https://www.health.gov.sk/?Postupy-Prevencia

6. HEALTHY EATING

Why we eat. What we eat. How much we need to eat. How nutrition relates to health. A balanced diet. Healthy plate. The healthy eating pyramid

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Why we eat

REMEMBER!

Food is one of the basic conditions of human existence.

Our body needs a constant supply of energy and various nutrients to function. The source of these is food. In addition, it needs to take in water every day. Regular intake of food is important for all processes in the human body.

Hunger informs us of the need to take in food. After the intake of food, there is a feeling of satiety.

Hunger and satiety are regulated by the hypothalamus (part of the brain) and the hormones leptine (hunger hormone) and ghrelin (satiety hormone), and other signals.

What we eat

We eat food that consists of a variety of foods of animal or plant origin. We divide them into food groups according to their nutrient composition, how they are usually consumed and their origin.

REMEMBER!

We should eat mainly **basic and as little processed food as possible**. We should choose **Nutritionally valuable foods that are rich in nutrients and provide adequate amounts of energy.**

In the food pyramid, these food groups are: non-starchy vegetables and fruits, starch-rich foods, protein-rich foods (dairy and other), fats, oils and nuts.

How much do we need to eat

Our body needs to **consume enough food each day to meet all its nutritional requirements for energy and nutrients**. These requirements vary according to sex, age, physical activity, health and, in women,

pregnancy and breastfeeding. **A deficiency or excess of ingested energy and nutrients negatively affects the functioning of the body** and can lead to impairments that manifest as health problems or even disease.

How nutrition relates to health

Diet and nutrition is one of the factors that has a significant impact on human lifespan and the development of various diseases. These include **chronic non-communicable diseases** such as overweight and obesity, cardiovascular disease, type 2 diabetes and some cancers. The caloric value of our diet and the composition of the various nutrients in it act through several mechanisms in our body, either promoting health or, on the contrary, damaging it.

REMEMBER!

For good health is important:

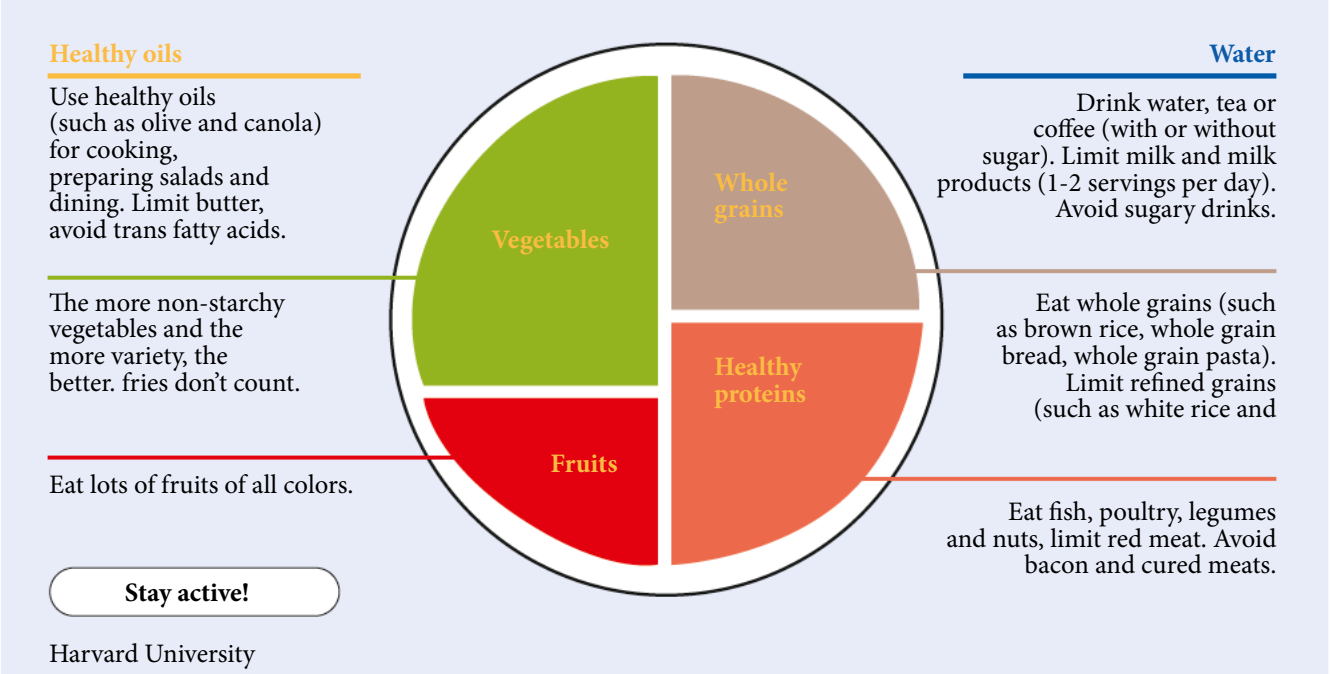
- **Eat healthy.**
- **Have sufficient physical activity and limit sedentary lifestyle.**
- **Maintain optimal body weight and waist circumference.**
- **Don’t smoke! Avoid alcohol and other addictive and harmful substances.**
- **Get enough sleep.**

Balanced diet. Healthy plate. Healthy eating pyramid.

A healthy diet contains a balanced amount of energy, nutrients and other necessary substances. It ensures the proper functioning of our body and is beneficial to our health.

To help people eat healthily, experts are developing dietary recommendations based on the food groups, based on scientific research. These are illustrated using **food plates** or **pyramids**.

Healthy Eating Plate



Source: https://www.health.gov.sk/?Postupy-Prevencia

REMEMBER!

Healthy eating according to the principles of the food pyramid also reflects
THE TEN PRINCIPLES OF HEALTHY EATING

1. **Eat a varied, balanced diet and don't overeat.**
2. **Eat more vegetables and fruit daily.**
3. **For cereals, give preference to whole-grain foods.**
4. **Prefer milk and low-fat dairy products.**
5. **Eat more legumes and fish, less meat.**
6. **Consume fats, oils and drinks that promote health.**
7. **Avoid foods and drinks rich in sugars, fats and salt.**
8. **Drink water from thirst. Do not drink or limit drinking alcoholic beverages.**
9. **Shop, prepare and eat mindfully. Take care to prepare food gently and safely.**
10. **Be physically active every day, maintain your optimal body weight and waist circumference.**

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Make a food pyramid, 12 - 14 years old

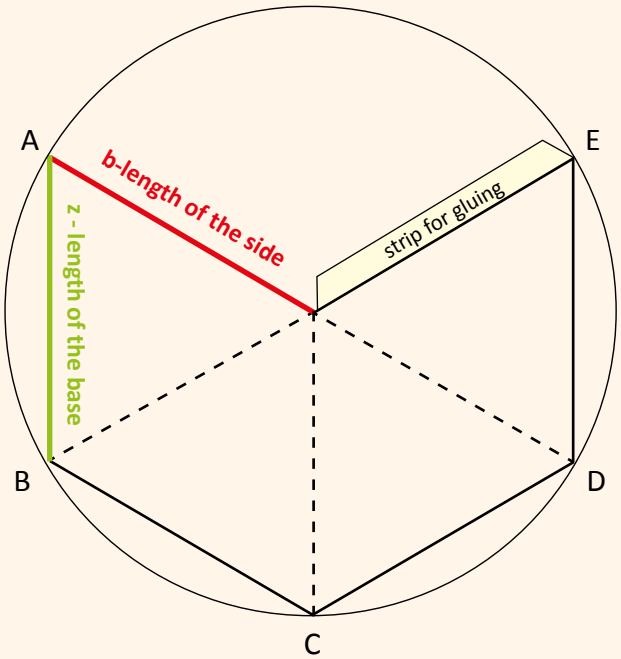
What you need:

✓ drawing/cardboard/sticker, glue, scissors, markers, food leaflets

a) Divide into groups.
b) As a group, talk about what the food pyramid is, what its levels are, what foods belong in it, and why.
c) Draw a pyramid on the drawing/cardboard/sticker using the template and assemble it.
d) Divide the pyramid into as many parts as the food pyramid has.
e) Cut out different types of food from each food group from the food leaflets.
f) Glue the food pictures on the food so that the foods that belong together are together.
g) Present your work in front of your classmates and discuss whether you have filled in the pyramid correctly. Are there foods in it that are unhealthy?

Developed pyramid using a compass

1. Set the length of the side edge of the pyramid (b) as the radius in the circle and make a circle.
2. Connect the centre of the circle with point A.
3. Set the length of the base (z) in the circle and intersect the circle from point A.
4. Point B is created, mark points C, D, E using the same procedure.
5. Join points B, C, D, E gently pencil with the center of the circle (in these places the corner of the pyramid will be bended after cutting).



Activity 2:

Healthy Eating Descator Survey, 12 - 14 years old (long-term task, class preparation, 45 - 90 min.)

What you need:

✓ pen, paper

a) Divide into groups of five (the number of groups may vary according to the number of pupils in the class).

b) In each group, choose a captain, a spokesperson and a recorder.

c) The task of each group will be to design an inquiry about healthy eating based on the Healthy Eating Descriptor. One group will design a poll for classmates, the second for teachers, the third for parents, the fourth for grandparents, and the fifth for the general public.

d) The questionnaire will contain a minimum of five questions from the healthy eating dietary planner. The questions will be tailored to the target group of respondents. Pupils in each group will have at least twenty respondents complete their questionnaire.

e) They evaluate the questionnaire and discuss the answers of their respondents in the group. They try to justify their answers in the light of their age and way of life.

f) The group chooses one or two spokespersons. They prepare a poster with the answers to their survey. They will present the results of their survey and suggest ways their respondents could improve/enhance their lifestyle based on the healthy eating decalogue.

g) In the discussion, the groups will explain their views and give the most important arguments to support them. Once the group spokespersons have given their opinion, the other group members can join in the discussion. The teacher makes sure that each group has the same amount of time.

h) The teacher asks the groups to summarise their views and arguments.

i) Next, we discuss with the pupils:

j) Did you find the arguments to support your position easy or difficult?

k) How did you find working in the group? Were your arguments respected?

l) Did you observe the principles of discussion - eye contact, paraphrasing, keeping time, not jumping into each other's speech?

m) Which arguments convinced you to change your diet?

7. EATING OUT

School meals. Meals in the restaurant. Catering in fast food. Food packaging (labels): information on the composition and nutrients in food. Advertising and food

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Food eaten away from home is not just about satiating hunger. It builds social relationships, social bonds, allows the experience of diverse cuisine and promotes cultural exchange. It is part of social, cultural and religious events, entertainment and work meetings. Contributes to business development and job possibilities.

The control of **healthy eating** out tends to be more challenging because it is subject to multiple influences. It is facilitated by a person‘s well-established eating habits.

Meals at school

Balanced meals with adequate amounts of energy and the necessary nutrients ensure a steady release of energy throughout the day, which supports brain function, concentration and attention. A varied diet rich in vitamins, minerals, fibre and good quality protein with a proper drinking regime improves cognitive function, the ability to learn and retain information. It also affects our mood and emotional resilience.

REMEMBER!

Diet, drinking, exercise, ideally in the fresh air, sleep, relaxation and other factors are important for efective learning and achieving better academic results.

Healthy snack

A healthy snack is an important source of energy and nutrients. Planning your snack in advance allows you to control your nutrient content and energy intake. At the same time, it reduces cravings for and consumption of unhealthy foods.

REMEMBER!

A healthy snack should include vegetables, fruit, sources of fibre, easily digestible protein and a suitable drink in sufficient quantities.

Examples of suitable snacks: *fresh fruit, vegetable snack with dip, vegetable wrap, smoothie with fruit, vegetables and milk or yoghurt, wholemeal bread with avocado, salmon, egg, cottage cheese or unsweetened yoghurt with fruit and nuts, wholemeal crackers with cheese.*

Lunch at school

School canteen meals have their limitations, but there are also efforts to broaden the choice of meals and to include vegetables, pulses and fish in their preparation. Try to avoid drinking sweetened drinks at lunch - plain water is best. Don't waste food! If you prepare your lunch at home and bring it to school, you are better able to prepare it according to the principles of healthy eating.

Meals in the restaurant

The offer in restaurants is very wide and requires our conscious decision-making. Make sure to choose dishes made from fresh ingredients and only indulge in treats occasionally. Prefer dishes that contain vegetables, lean meats, fish, whole grains and are prepared by boiling, stewing or steaming. Drink plain water, unsweetened mineral water or tea with meals, not sweetened drinks. Make sure the portion size is appropriate. An appetizer or soup should not fill you up too much. For desserts, choose less sweet and less fatty options. Enjoy your food, eat slowly and take a break. This helps the brain recognize the fullness of the stomach and regulate the feeling of satiety. Don't be influenced by your environment and stick to the principles of healthy eating. Learn asertively how to refuse.

Healthy eating in fast

Healthy eating in fast food outlets is a big challenge. Although some chains offer healthier options, most of the food is not healthy. **They are high in calories, saturated fat, added sugars, salt, preservatives and artificial flavours.** Many of them are highly processed foods that, when eaten regularly, increase body weight and the risk of chronic diseases.

REMEMBER!

If you eat fast food, do so only exceptionally. Choose healthier options, smaller portions, avoid fried foods, sauces, chips, extra free portions, drinking sweetened and cola drinks, caffeinated drinks with cream or whipped cream.

Food packaging (labels): information on the composition and nutrients in food

Food labelling is used to identify foods, providing basic information on their composition and nutritional content. Food labelling is regulated by law and aims to promote transparency in the food industry, to ensure food safety and to give consumers choice. In accordance with the law, the manufacturer has to provide certain information on a mandatory basis and others on a voluntary basis. They are on the front or back of the packaging.

On the **reverse side of the label** we can find the **composition, allergens and nutritional data of the food**.

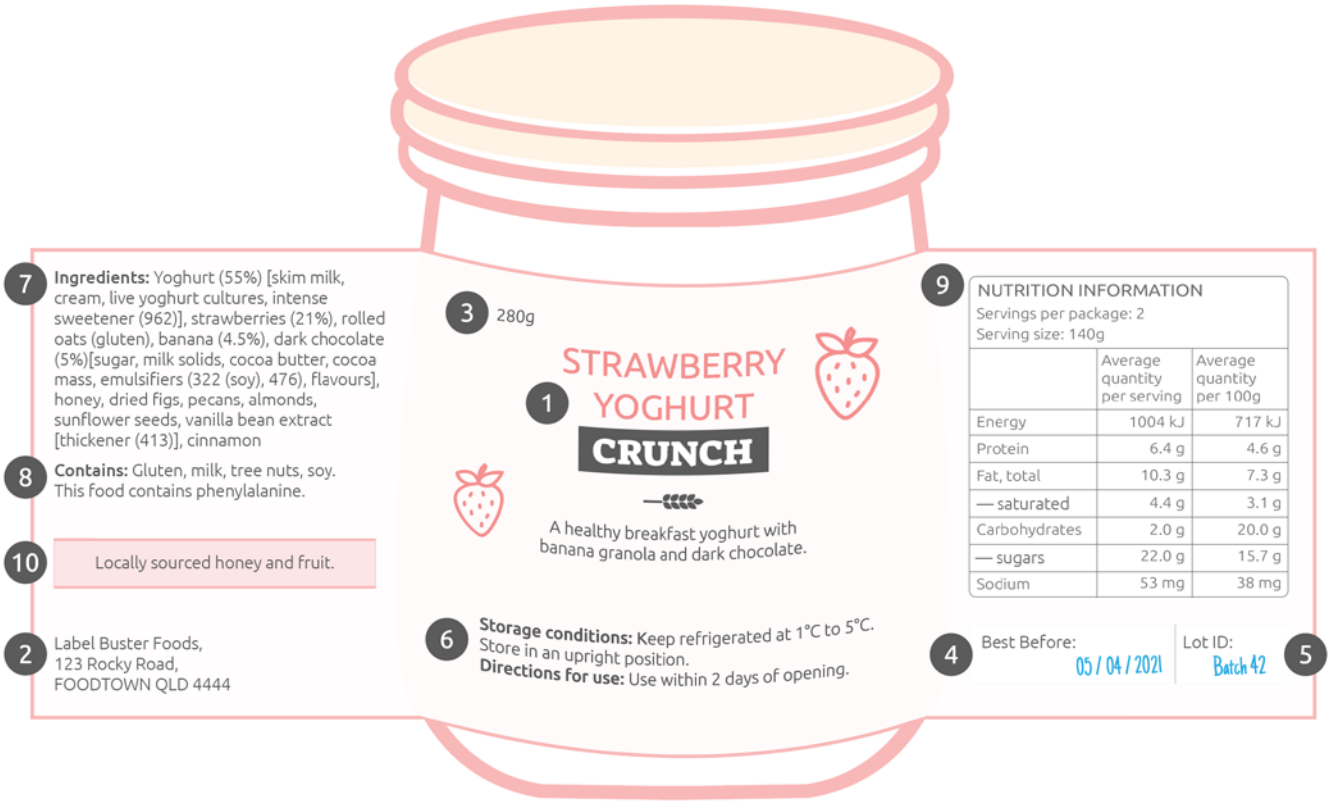
- **The ingredients in a food** are listed in descending order and as a percentage. Too many ingredients may mean that it is highly processed. The specific type of fats or source of sugars in the food is also important. Food ingredients also include various additives, e.g. colouring agents, preservatives, etc. These are indicated by the letter E with numbers. These substances are safe to consume in permitted amounts.

- **Allergens** must be marked in a different colour or typeface from the other ingredients.
- **Nutrition facts** are usually tabulated and given per 100g or 100ml of food or per serving. The mandatory nutritional data are energy in kJ/kcal (4,2 kJ = 1 kcal), fat and of which saturates, carbohydrates and of which sugars, protein and salt. Optional are fibre, vitamins, minerals and others.

On the **front of the** food, the manufacturer also voluntarily uses a graphic symbol (usually based on the traffic lights principle) that expresses the overall nutritional value of a particular type of food. Such a symbol is an important aid in the purchase and selection of foods with a more appropriate nutritional composition. Authorised nutrition claims and other symbols may also appear on the front of the food to indicate that it is, for example, gluten-free or vegan.

The **expiry date of the food** is:

- A best before date means that the food can be consumed after the date indicated, provided that the food has been stored properly and the packaging has not been damaged.
- The use-by date ("use by...") means that the food is not recommended to be consumed after that date.



Advertising and food

Advertising is a communication tool used to promote products or services in order to achieve sales. Food advertising is regulated by law. However, it significantly influences our behaviour – both the purchase and consumption of food. We should not be subject to it.

REMEMBER!

Our recognition of advertising policy, getting more information about food, distinguishing between our desires and our needs are important for healthy eating. Food advertising can be useful if it promotes healthy eating.

B) ACTIVITIES TO CHOOSE FROM (45 – 90 MIN.)

Activity 1:

Compare recipes, 12 – 14 years old (45 – 90 min., work at home, long-term project)

What you need:

✓ paper, pen, colouring pencils, glue, pictures of food, internet

a) Divide into groups.
b) In each group, choose a captain, a spokesperson and a recorder.
c) The task of each group will be to choose a recipe they know from home and compare it with a recipe in a restaurant or fast food (e.g. roast chicken at home and in a fast food restaurant).
d) Compare the recipes and prepare a video presentation like you know from cooking shows. The length of the video should be no more than 3 min.
f) Finally, the pupils discuss eating out and at home.

Activity 2:

Health food commercial, 10 – 14 years old, (45 – 90 min.)

What you need:

✓ paper, pen, colouring pencils

a) Divide into groups.
b) The task of each group will be to come up with an advertisement for a healthy diet and rehearse a short skit. The skit should last no more than 3 min. You can film your ad on your mobile phone or tablet.
c) Pupils present their skits to other classmates. At the end they discuss which skit they liked and why.

8. RISKS OF INAPPROPRIATE DIET

Dietary patterns and models. Inappropriate lifestyle - impact on health and fitness. Eating disorders. Overeating and obesity. Triggers binge eating. Where to seek help for obesity or eating disorders. Food allergies and intolerances

REMEMBER!

Inappropriate eating can carry certain risks that have different causes, manifestations and health consequences.

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Dietary patterns and models

A dietary pattern (pattern, manner, style) represents the combinations of foods and beverages that a person typically consumes over a period of time. A varied diet with adequate intake of energy and all nutrients is the most appropriate for a healthy person.

Dietary styles associated with better health and prevention of chronic diseases are characterised by high intakes of vegetables, fruits, legumes, nuts, seeds, cereals and olive oil; low to moderate intakes of dairy products, fish and poultry; infrequent consumption of red and processed meats; and infrequent and moderate intakes of alcohol only in adults. The **Mediterranean way of eating** is the best known.

"Western-style" eating is typical of most people in developed countries. It is dominated by the consumption of highly processed foods, excessive calorie intake, high intake of saturated fats, sugars and salt. Together with low physical activity and a sedentary lifestyle, it causes weight gain and several chronic diseases.

Vegetarianism (no meat, sometimes fish) and veganism (no animal products, including dairy, eggs and sometimes honey) are also common eating styles. Although the benefits outweigh the risks (e.g. deficiency of certain vitamins and minerals, protein), their practice is not simply a matter of eliminating certain foods from the diet. In the case of children and adolescents, special care must be taken to ensure that the diet consumed is of the correct nutritional value.

Other alternative styles of eating are more difficult to practice and carry greater risks of inadequate nutrient intake. Various diets and restrictions on the consumption of food or some of its components without a health reason are generally inappropriate, especially for children and adolescents. They can lead to disturbances in the growth and development of the body, improper functioning of the immune system, skin problems, fatigue, exhaustion and genital dysfunction.

Some diseases or medical conditions (e.g. diabetes, celiac disease) require certain **dietary measures,** but those are part of the treatment and are usually led by a doctor, nurse or nutritionist.

REMEMBER!

A diet based on a predominantly plant-based diet, supplemented with appropriate animal foods, is now considered the most appropriate way of eating a varied and balanced diet that most people can easily follow in the long term. It is also reasonably environmentally friendly.

Inappropriate lifestyle - impact on health and fitness

REMEMBER!

The most significant components of an improper lifestyle are **poor diet and inadequate nutrition, excessive alcohol consumption, smoking, lack of physical activity and sedentary lifestyle. They increase the risk of various chronic diseases and premature death**.

Eating disorders

Eating disorders are **serious mental illnesses** that manifest themselves in **abnormal eating habits that damage the body**. They include **anorexia nervosa, bulimia, binge eating** and other less common disorders.

They can be triggered by a variety of factors, e.g. the pursuit of fashion slimity, a perfect figure, perfectionism and others. They require timely professional help.

Overeating and obesity

Overeating, i.e. excessive calorie intake, leads to fat storage in the body and an increase in body weight (overweight to obesity). To be healthy, one must have an adequate **body weight** for height (expressed by the body mass index, BMI) and an adequate **body composition** (proportion of body fat and muscle mass). **Obesity is both a disease in its own right and a risk for many other diseases.** Age-appropriate body weight and good physical fitness are very important for health.

Triggers of binge eating

Overeating or binge eating is eating without feeling hungry. The most common triggers include emotional states (stress, mood), appearance, smell and portion of food, time of day (evening), social events (visitors, parties, holidays). **Overeating leads to weight gain.** Psychological techniques are used to cope with uncontrolled eating by addressing a person's thoughts, feelings, and behaviors when eating.

Do you know what Mindful Eating is?

Pay attention to what and how you eat.

Source: https://www.letslive.shop/blogs/stories/what-is-mindful-eating-and-how-is-it-beneficial

Where to seek help for obesity or eating disorders

REMEMBER!

Timely professional help is key. In the first instance, you should contact your GP (for adults this is a general practitioner, for children and adolescents it is a paediatrician – a doctor for children and adolescents.) The doctor assesses the condition and recommends a solution, as specialist medical care from different professionals is often needed. Self-help solutions or internet resources may not lead to success and may make the condition worse.

Food allergies and intolerances

These are two different types of adverse food reactions.

An allergy is an exaggerated reaction of a person's **immune system** to a normally harmless substance. This substance is called **an allergen**; it is a protein from food, pollen, house dust, animal hair or mould. Most allergies occur during the first year of life and can be hereditary. **Food allergies are most commonly caused by milk, eggs, fish, shellfish, nuts, peanuts, wheat, soy.** Allergies are manifested by skin or respiratory symptoms and can be life-threatening. **A person with an allergy must strictly avoid consuming even a small amount of food that contains the allergen in question.**

REMEMBER!

A person with an intolerance tolerates these foods individually, small amounts are usually well tolerated.

Educational video on food allergens

https://www.eufic.org/en/healthy-living/article/life-with-a-food-allergy-video

Food intolerance is not an immune reaction. It is caused by a deficiency of certain digestive enzymes. Symptoms are less severe, rather unpleasant. These are digestive and skin manifestations or headaches. The most common food intolerances are **lactose intolerance** (milk sugar), **fructose intolerance** (fruit sugar), **histamine intolerance** (histamine is a substance in proteins) and **gluten intolerance** (gluten is a complex of different proteins found in cereal grains such as wheat, barley and rye). Food intolerance is most often caused by dairy products, certain vegetables and fruits, chocolate, egg (especially the white), food additives, alcoholic and non-alcoholic beverages (fruit juices), and foods containing histamine (smoked meats, aged cheeses, pickled vegetables, and others).

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Nutritional guidelines good or bad?, 12 - 14 years old (45 - 90 min., work at home, long-term project)

What you need:

✓ paper, pen, crayons, glue, food pictures, internet

a) Divide into five groups.

b) In each group, choose a captain, a spokesperson and a recorder.

c) The task of each group will be to gather information on the given topic:
   1. Vegetarianism
   2. Veganism
   3. Alcoholism
   4. Obesity
   5. Bulimia/Anorexia

d) They will prepare a video presentation on the assigned topic. The length of the presentation should not be more than 3 min.

e) Pupils write the information in a table as they present their projects:

	The principle of nutrition	Positives	Negatives
Vegetarianism			
Veganism			
Alcoholism			
Obesity			
Bulimia/Anorexia			

f) At the end, pupils discuss, complete the sentences:

I would like to be a vegetarian because ..... .

I like about vegetarianism that ..... .

If I had a friend who drank a lot of alcohol, I would tell him ..... . I would advise an obese person to ..... .

If I had a classmate who I saw as having an eating problem, I would ..... .

Activity 2:

Intolerance Questionnaire, 10 - 14 years (45 min.)

What you need:

✓ paper, pen, colouring pencils

a) Divide into two groups.

b) In each group, choose a captain, a spokesperson and a recorder.

c) The task of each group will be to design a questionnaire about food allergies and intolerances. The questionnaire will be administered to at least 30 people and evaluated. They will prepare a poster with the results.

d) Pupils present their posters to their classmates. The length of the presentation should not be more than 3 min.

9. FOOD SAFETY AND HYGIENE

Food contamination. Purchasing, storage, handling, preparation and food consumption. Food labelling . Food additives.

A) INTRODUCTION TO THE TOPIC (15 MIN.)

Safe food is essential for human health. This means avoiding any contamination of food and observing basic hygiene habits in all food handling activities.

Food contamination

Food contaminants are harmful substances (pollutants and micro-organisms) that can cause **health problems** such as **infectious diseases** caused by bacteria, viruses and parasites or **toxic diseases** caused by chemicals such as mycotoxins produced by fungi, heavy metals such as lead, cadmium mercury, rádioactive substances and others.

Infectious diseases can be caused by the consumption of undercooked meat, unpasteurised milk and dairy products, poor hygiene when handling and consuming food, or contaminated soil, water or contact with an infected animal. Symptoms of infection develop rapidly and include fever, headache, nausea, vomiting, abdominal pain and diarrhoea. Chemical **contamination** does not usually lead immediately to ill health (poisoning is an exception), but it can gradually affect a person‘s immune or hormonal system and lead to diseases such as cancer.

REMEMBER!

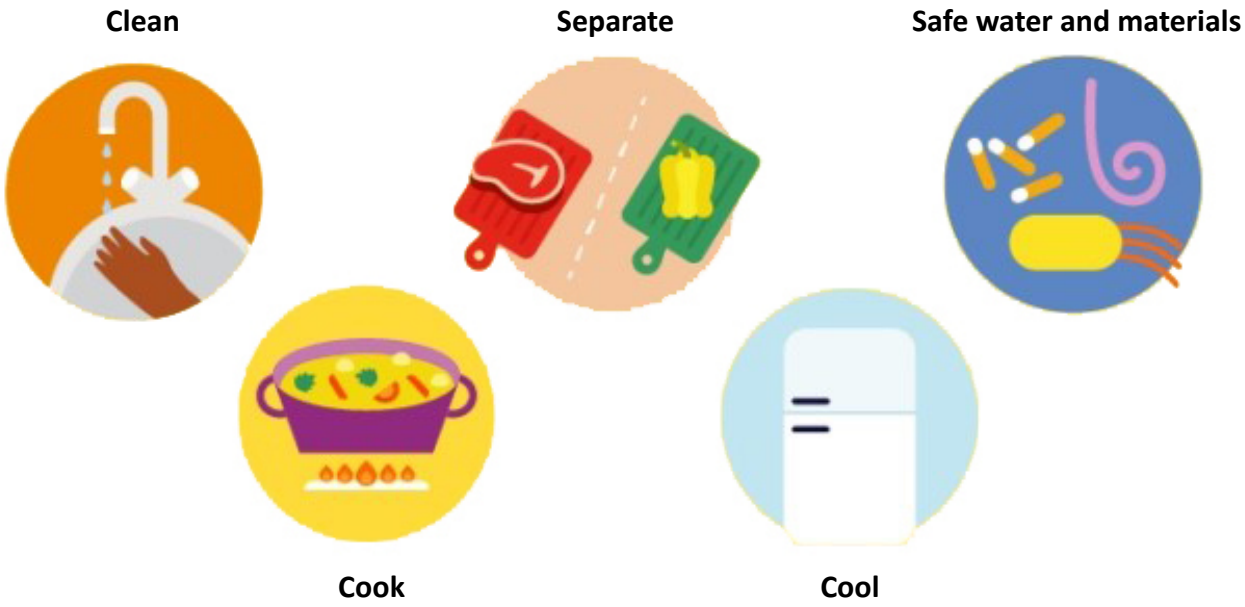
Food safety is very important for pregnant women, young children, the elderly and sick people, especially those with immune deficiencies.

Eating safe food means first and foremost knowing how to buy, prepare, store and consume food properly.

Purchase, storage, handling, preparation and consumption of food.

The basic measures for safe food are:

Basic food safety measures



Source: https://www.eufic.org/en/food-safety/article/how-to-prevent-food-poisoning-tips-tricks

When buying:

- Buy fresh and non-perishable food (vegetables, fruit, meat). Fish from proven sources.
- Keep track of the expiration dates of the food.
- Use refrigerated packaging when transporting perishable foods.

Proper storage of food in the refrigerator

https://www.eufic.org/en/food-safety/article/what-foods-should-or-not-be-stored-in-the-fridge

Storage:

- Observe the storage conditions for each food (refrigerated, at room temperature, dry, etc.).
- Store cooked food at room temperature for up to 2 hours, then refrigerate at 5 °C. At this temperature, bacteria multiplication is slowed down, so food can be stored for longer.
- Store raw and cooked food separately.
- Store food in closed containers.

In handling:

- Wash your hands thoroughly before preparing food (with warm water and soap).
- Wash and clean food (fruit, vegetables, meat).
- Keep clean all areas and items used in food handling.
- Use tools (knives, containers, trays) separately for raw and cooked food.

In preparation:

- Ensure that meat, eggs, seafood are cooked sufficiently. Maintain a temperature of 75 °C for at least 15 minutes (also in the centre of the meat, check with a meat thermometer). At this temperature the bacteria will die.
- Never grill over an open fire. This produces hazardous substances that are considered to be high risk for cancer. Such substances are also formed in frying fats and oils, frying and smoking.

- Prefer gentle cooking methods such as boiling or steaming. The high heat involved in grilling, frying, baking or deep-frying, particularly of meat but also of starchy foods (potatoes, bread), leads to the formation of harmful cancer-causing substances. These treatments are rarely used.

When consumed:

- Wash your hands well before each meal.
- Drink and use safe water from safe and known sources (e.g. drinking water, bottled drinking water, mine water and spring water).
- Do not consume food after its use-by date. Once opened, such food must be stored according to the stated conditions and consumed within the stated number of days after opening. If the date of minimum durability is indicated, the food has been properly stored and its packaging has not been damaged, it is safe to eat after that date.
- Eat the heated food immediately, do not reheat it.
- Do not refreeze thawed food. Process them immediately, do not leave them at room temperature for long periods of time.
- When heating food in the microwave, observe the recommended heating time and temperature.
- Do not consume foods affected by the mould, even after it has been removed (bread, pastries, compotes, yoghurt, etc.).
- Do not eat burnt and burnt food.
- Give preference to organic food, which is usually less contaminated with fertilizers and chemicals.

Food safety labelling

From a food safety point of view, the most important information on food packaging is the **date of minimum shelf-life** or **use-by date** and **ingredients causing allergies or intolerances**.

Food additives

Food additives (food additives, additives) are any chemical substances that are added to food to achieve specific desirable effects in the food. Only authorised substances and authorised amounts may be used. They must be listed on the label of the product and marked with the letter E, indicating that they have been approved in the European Union as safe. People with allergies or hypersensitivities to certain additives should pay attention to them. Many additives are found in highly processed foods.

Fortification is the addition of nutritionally beneficial substances, such as vitamins, minerals, fibre and other nutrients to foods to reduce the effects of their deficiency or to replace substances whose content has decreased during food processing. A well-known example is the fortification of salt with iodine, thereby preventing the development of gland disease. A number of fortified foods are available, such as flour, cereals, juice, milk and dairy products. Adding beneficial substances to these foods is beneficial to health, but it is more important to follow the general advice of a healthful diet.

REMEMBER!

For safe eating, observe:

- Good hygiene habits. Wash your hands thoroughly before and during food preparation.
- Buy safe and wholesome food.
- Store food properly.
- Ensure safe and hygienic food preparation.
- Eat fresh and safe food.
- Use safe water.

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Forgotten snack, 10 – 14 years old (45 min., work at home, long-term project)

What you need:

✓ paper, pen, colouring pencils, glue, pictures of fruit and vegetables, bread - tithe, plastic bag, camera/mobile, internet

a) Pupils work individually or in pairs.

b) Every pupil has forgotten a snack in their school bag at some point. Write what happens to the forgotten snack.

c) Do an experiment: put a piece of fruit or a piece of bread in a plastic bag. Place it in a warm place and watch what happens. Record your observations using photos or draw what happens in this chart:

Type of food	Day of observation	Appearance of food	Note

d) Find out, what spoiled foods do to the human body.

e) Prepare a poster with your results. Present your poster in front of your classmates at school. The length of the presentation should be no more than 3 min.

Activity 2:

How we store food, 10 – 14 years (45 min.)

What you need:

✓ paper, pen, colouring pencils, sticky tape, food pictures, internet

a) Cut out, print or draw pictures of food from a magazine.

b) Discuss with pupils: How do we preserve food? Where do we store it? Why is it important to keep them in good quality for as long as possible? What does spoiled food do to the human body?

c) Together, make a list of the foods you use most often in your home.

d) Pupils work in pairs or individually to complete a table showing how food is stored:

Type of food	Method of storage

e) Finally, we will review the chart and food storage methods together.

10. SUSTAINABLE EATING: FOOD THAT IS HEALTHY FOR PEOPLE IS HEALTHY FOR THE EARTH

Sustainable eating. Climate change, environment and food security.
Food production and consumption and their impact on climate change – „from farm to table".

A) INTRODUCTION TO THE TOPIC (15 min.)

Food is not only a means of satisfying hunger and gaining energy, but it also has a significant impact on our health and the planet we live on. Our healthy eating choices contribute to a sustainable lifestyle for us and for future generations.

Sustainable catering

Sustainable eating is a way of eating that provides enough food for the current population while minimising negative impacts on the environment, social justice, health, the economy and future generations.

REMEMBER!

Sustainable eating is characterised by: sustainable farming with organic and regenerative methods, mimicking natural ecosystems in crop and livestock production, minimising pollution, eating local, nutritionally rich and minimally processed food, producing food in equitable conditions, selling food at fair prices.

An example of sustainable agriculture

Source: https://www.youtube.com/watch?app=desktop&v=iloAQmroRK0

Climate change, environment and food security

Climate change, the environment and food security are interlinked. **Food security is ensured when all people have access to sufficient, safe and nutritious food to eat.** However, this is threatened by population growth, economic factors and negative the impacts of food production and consumption, which are leading to climate change and environmental degradation.

REMEMBER!

To achieve food security, it is essential to promote sustainable agriculture and ensure equitable food distribution.

Food production and consumption and their impact on climate – „from farm to table“

REMEMBER!

„Farm to Fork“ *(F2F)* is a European strategy to achieve a healthy, fair and environmentally friendly food system. It aims to deliver healthier food, reduce the environmental footprint of farming and ensure food security and fair rewards for farmers.

All human activity has an impact on the environment. Mass production and globalisation are making this worse. Environmental impact is most often expressed as carbon and water footprints. The **carbon footprint** is the total amount of greenhouse gases produced by human activity. **Greenhouse gases** are gases in the atmo-sphere such as carbon dioxide, methane and water vapour. They absorb some of the heat generated by heating the planet, creating a greenhouse effect that raises the temperature of the Earth‘s surface. The **water footprint** indicates the volume of fresh water in litres or cubic metres that is used in the production of a consumer good or service. We can calculate our carbon and water footprint on several websites on the Internet.

The entire food chain - food production, processing and transport, sales and consumption - has a significant negative impact on the environment and climate.

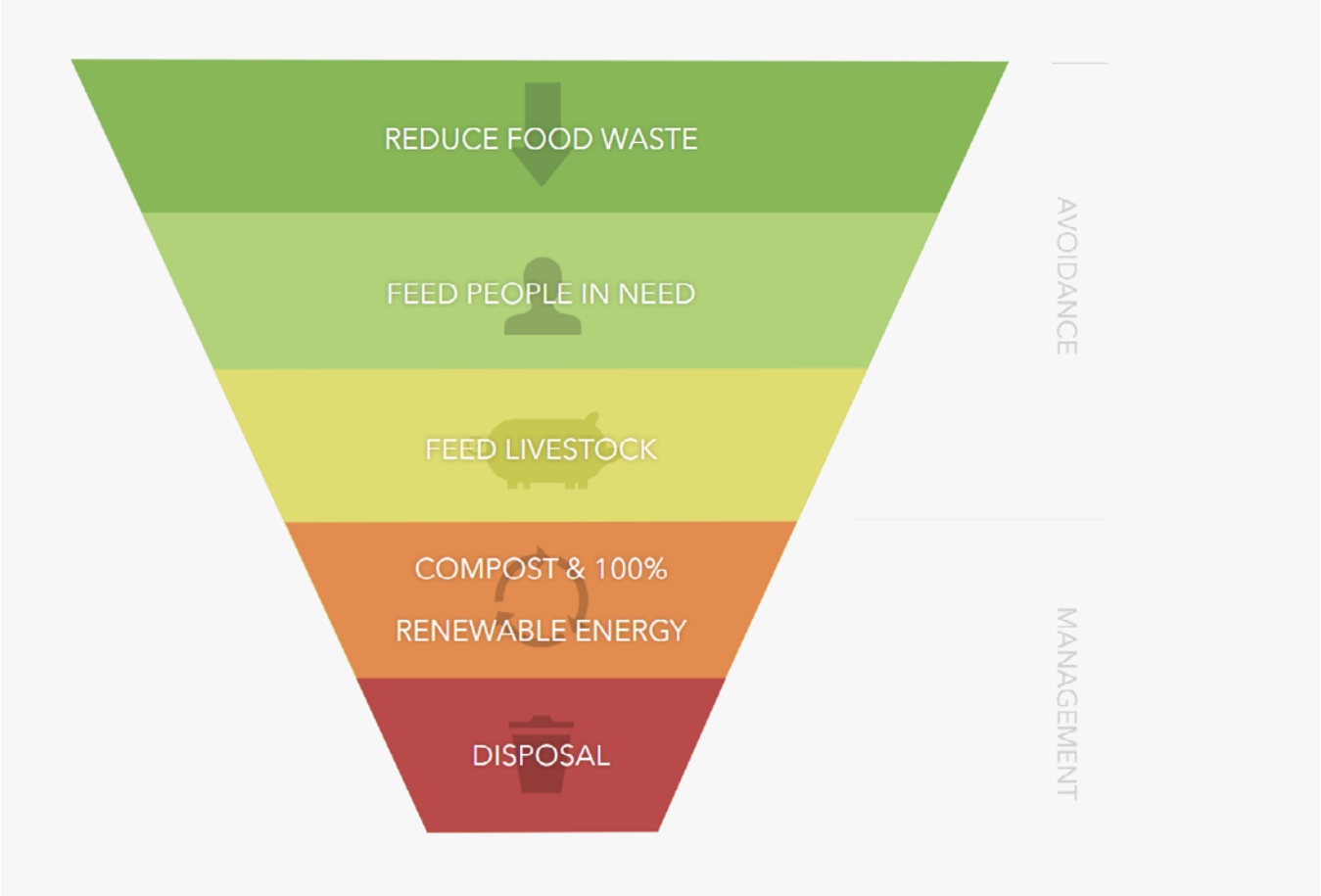
REMEMBER!

In general, plant foods have a lower carbon and water footprint compared to foods of animal origin. **Eating a predominantly plant-based diet is thus not only good for our health but also more environmentally friendly.**

An important step to protect the environment is to **minimise the waste of resources and reduce food waste**. Many people on the globe go hungry and, paradoxically, a large amount of food is wasted. So never throw food away unless it is unavoidable! Put only the food on your plate and the amount you are sure to eat.

The food waste pyramid also offers effective reducing of food waste in an environmentally friendly way: reducing waste is the most important, followed by donating food to people in need, feeding livestock, composting, and the last option is getting rid of waste.

Food waste pyramid



Article source: https://www.eatresponsibly.eu/en/foodwaste/5#section-fridge

REMEMBER!

Basic practices to minimize food waste are: meal planning, shopping with a prepared list, keeping track of expiration dates, serving adequate portions, proper food storage, using leftovers, and composting. This not only reduces food waste but also saves resources for food production.

Food that is healthy for people is healthy for the Earth

Eating sustainably means choosing and eating food that is healthy for people and the environment.

A double food and environmental pyramid.

Source:The BCFN Foundation double Food and Environment Pyramid

The double pyramid model is one suggestion that helps to visualise which foods should form the basis of the diet and which should be eaten less frequently in terms of their environmental impact. It means:

1. Increase the proportion of plant-based foods.
2. Support local resources and local producers.
3. Preference for organic/bio/eco foods.
4. Selection of sustainable fish and seafood.
5. Eating meat responsibly.
6. Promoting fair trade.
7. Minimizing processed foods.
8. Gardening and self-cultivation.

B) ACTIVITIES TO CHOOSE FROM (45 - 90 MIN.)

Activity 1:

Wasting food, 10 – 14 years old (45 – 90 min., homework, long-term project)

What you need:

✓ paper, pen, coloured pastels, glue, food pictures, internet

a) Introductory discussion with pupils: which food have you thrown away in the last week? What was the amount? How much did you eat in the school canteen? Do you turn away your lunch if you do not like it? Do you think that food is also thrown out by children in Africa? Etc.

b) Pupils work individually or in pairs. They prepare a poster about food waste.

b) Second (next) lesson: pupils present their projects to their classmates. The length of the presentation should not be more than 3 min.

c) The selected student writes the information found in the projects on the board or on a poster on flipchart.

d) Pupils work together to find solutions to the problem of food waste. They think about causes and consequences.

e) The pupils' task will be to create a chain of causes and consequences of food waste at each stage of the food chain (from the farm to the table).

f) Guided discussion by the teacher: finding solutions to minimize food waste. Learning to consume all the food purchased. Not to waste food. To shop according to the list.

Activity 2:

The Ten Commandments of Not Wasting Food, 10 – 14 years (45 min.)

What you need:

✓ paper, pen, colouring pencils

a) Divide into two groups.

b) In each group, choose a captain, a spokesperson and a recorder.

c) The task of each group will be to propose a food waste-free decade. They will prepare a poster with pictures.

d) Pupils present their posters to their classmates. The length of the presentation should not be more than 3 min.

e) Discussion at the end: how many of the points from the decalogue were the same between the groups?