



Let's move Europe:

School-based promotion of healthy lifestyles to prevent obesity

Learning units about healthy lifestyles promotion for primary school



Co-funded by the
Erasmus+ Programme
of the European Union



Edition: Universidad de Extremadura. Servicio de Publicaciones
C/ Caldereros, 2 - Planta 3ª. 10071 Cáceres (España).

Tel. 927 257 041; Fax 927 257 046

E-mail: publicac@unex.es

<http://publicauex.unex.es>

I.S.B.N.: 978-84-9127-163-5

Cáceres, 2022



Co-funded by the
Erasmus+ Programme
of the European Union

List of authors

University of Extremadura

David Sánchez Oliva
Tomás García Calvo
Pedro Antonio Sánchez Miguel
Francisco Miguel Leo Marcos
Juan José Pulido González
Inmaculada González Ponce
Diego Muñoz Marín
Javier Sevil Serrano
Miguel Ángel Tapia Serrano

University of Cádiz

José Castro Piñero
Alberto Grao Cruces
Daniel Camiletti Moirón
Rocío Izquierdo Gómez
Julio Conde Caveda
Carmen Padilla Moledo

University of Castilla-La Mancha

Mairena Sánchez López
Abel Ruiz Hermosa
Vicente Martínez-Vizcaíno
Carlos González Morcillo

University of Granada

Palma Chillón Garzón

University of Lisboa

João Martins
Marcos Onofre
Adilson Marques
Tiago Ribeiro

University of Oporto

Jorge Mota
Paula Silva
Paula Santos
Andreia Pizarro

Université Côte d'Azur

Anne Vuillemin
Karine Corrion
Jean-Marie Garbarino

Universidad de Bolonia

Andrea Ceciliani
Laura Dallolio
Alice Masini
Sofia Marini

Ulster University

Marie Murphy
Angela Carlin
Sinead Connolly

Sociedade Portuguesa de Educação Física

Nuno Ferro
Felix Bolaños
João Costa

Azur Sport Sante

Dusan Pjevac
Marion Fournier
Fanny de Toni

Moving School 21

Raffaella Mulato
Riegger Stephan



1

LEARNING
UNITS ABOUT
HEALTHY
LIFESTYLES
PROMOTION



2

LEARNING
UNITS ABOUT
HEALTHY
NUTRITION
FOR PRIMARY
SCHOOL



3

LEARNING
UNITS ABOUT
PHYSICAL
ACTIVITY AND
SEDENTARY
BEHAVIOUR FOR
PRIMARY
SCHOOL



4

LEARNING
UNITS ABOUT
HEALTHY SLEEP
FOR PRIMARY
SCHOOL



1

LEARNING UNITS ABOUT
HEALTHY LIFESTYLES
PROMOTION

INTRODUCTION

In this document there are 54 learning units (LUs) focused on how to promote healthy lifestyles for primary and secondary school teachers. The learning units are divided into three main categories: 12 LUs related to healthy nutrition, 10 for physical activity and sedentary lifestyle and 5 for healthy sleep. All LUs have been divided for primary and secondary school, for this reason each teacher can find 27 LUs available for primary school and 27 for secondary school. The LUs can be used by all teachers of the school regardless of the subject they teach and obviously can be integrated, adapted and extended based on teacher's experience, also creating potential academic connections. Before exhaustively detailing the LUs proposed, a brief introduction on the importance of designing these actions to improve healthy nutrition, physical activity, healthy sleep and reduce sedentary behaviour in primary and secondary school is necessary. Physical activity (PA) combined with healthy eating and healthy sleeping habits are essential for many aspects of child health and development, including the prevention of chronic health conditions, such as overweight and obesity.

Physical activity during childhood and adolescence leads to many physical (i.e., improved physical fitness, bone health, cardiometabolic health) and psychosocial (i.e., psychological well-being, mood, cognitive functions) positive health outcomes^{1,2}. In order to obtain these beneficial effects, children and adolescents should practice at least an average of 60 minutes per day of moderate-to-vigorous intensity PA (MVPA) during the week.

However despite these recommendations, most children and adolescents across the world do not reach these levels, resulting in a pandemic of physical inactivity¹. Meanwhile, sedentary behaviours are more and more frequent both in children and adolescents¹. Healthy nutrition is defined as the intake of an adequate, well-balanced diet and we know from scientific literature that good habits^{3,4}, for example the consumption of fruit and vegetables during childhood, are related to lower adiposity, lower cardiometabolic risk factors, and higher academic performance^{5,6,7}. For this reason, it is essential to include these topics early in childhood education.

Finally, healthy sleep habits are essential for child and adolescent development²; longer sleep duration is associated with lower adiposity indicators, better emotional regulation, academic achievement, and quality of life, conversely a short sleep duration is related to adverse physical and mental health outcomes⁸. However, over the last decades, in these specific age groups, many children and adolescents do not comply with international physical activity⁹, dietary¹⁰ and sleep guidelines¹¹ showing how these are becoming a serious concern for public health.

In this frame, it is increasingly essential to promote healthy lifestyles initiatives, especially in the school setting. Children and adolescents spend a significant amount of time at school where they are exposed to supportive environments such as school health policies, physical and nutrition education, PA during school hours. Furthermore, most children's knowledge, skills, and habits for life-long health can be improved during school-days¹². At the same time, it is becoming more and more evident that interventions not only focused on school but also targeted on family are likely to be more most effective^{13,14}.

With the goal to achieve long term and sustainable changes in lifestyles behaviour it becomes necessary the involvement of both family and extra school environment.

For this reason, school-based interventions with extracurricular activities and healthy homework components could maximise family engagement and potentially improve the success of the health promotion intervention. In light of this, the present document contains 27 LUs that starting from the school context are expanded using extracurricular activities and homework promoting health¹⁵.



Each LUs has a main objective, a key message, useful materials and methods, frequency, duration and potential teaching/curricular links. Obviously, each LU is a starting point that can be expanded by the teacher of each subject. The links with the potential curricular aspects are not mandatory but are only suggestions. However, the Learning Units can be a good investment and an experiment to understand how movement is an excellent tool for learning. Each LU begins in the school setting with a brief teacher-led discussion that is preparatory to the work to be done in class. The various aspects that will be learned during the LU and the activities that can be managed in the class are highlighted. Subsequently, possible homework to manage in extra-school time and to test the acquired habits are presented. Finally, each LU ends with a time for discussion managed in class.

The innovative aspects of this proposal consist in the fact that such learnings take place in the school setting, but are also experimented and expanded in the extra-school context often with the involvement of families in homework and challenges, then be discussed back at school for final feedback.



2

LEARNING UNITS ABOUT
HEALTHY NUTRITION FOR
PRIMARY SCHOOL

1° LU WEEK ONE: HOW TO BUILD A HEALTHY DIET

Goal:

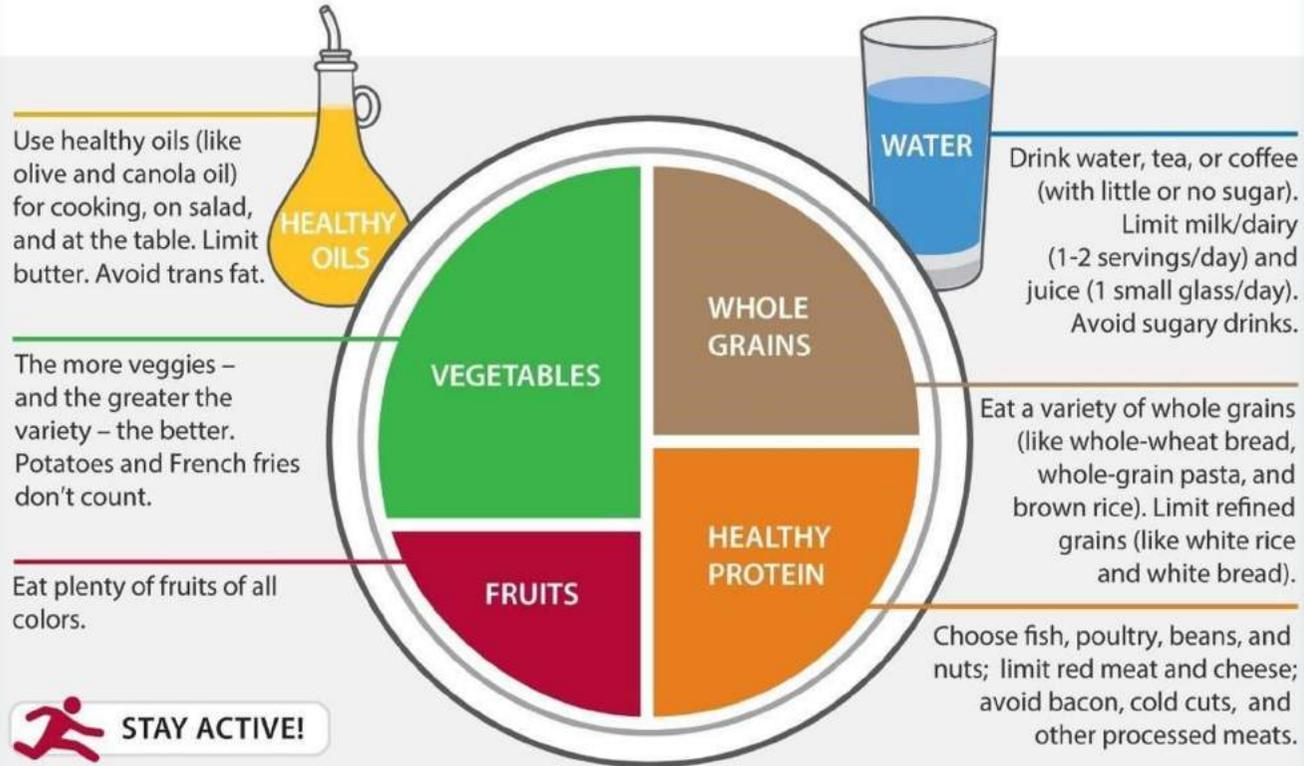
Knowledge about the proportions of nutrients needed to maintain a healthy diet and how to reach this goal through different foods

Key Message:

Follow a balanced diet based on vegetables and fruit, legumes and grains. Different countries may have different cultures, including food habits. Understanding what people eat and why can enrich our personal knowledge and make us discover new flavours and healthy habits.

Material: White paper plate (to divide into coloured wedges for different categories of food), coloured markers, poster, pc, <i>Eumove website-Application</i>	Methods: Initial discussion, laboratory-group activity, healthy homework	Frequency: one lesson	Timing: 60 minutes	Potential Curricular Links: Science, Math, Art, Foreign language (English, Spanish...)
--	--	---------------------------------	------------------------------	--

HEALTHY EATING PLATE



© Harvard University



Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu



LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy eating

Background: According to the Global Burden of Disease Project, overweight and obesity are the 4th risk factor for chronic diseases such as diabetes type 2, cardiovascular diseases and others. Notably, replacement of processed foods with a healthier diet has been linked to the reduction of the BMI and thus to the prevention of overweight associated diseases.

Discussion: Why is a healthy diet important? During the daily meals, what and in what proportion should be eaten? Explain what food categories are necessary to maintain a healthy diet (vegetables, fruits, healthy protein and whole grain), and that the intake of all of them is important. Every food provides some macronutrients (carbohydrates, proteins, fats), but in different quantities/proportions.

Try to find out if different countries have different food habits and why (e.g.: climatic conditions do not let certain vegetables grow properly).

Do you think you may like trying new foods?

Learning points

Teacher starts explaining the recommendations about how different food differs in terms of nutrients and what is necessary to set a healthy and balanced diet:

- Olive oil (or sunflower, canola, soybean oils): is a good source of healthy fats, try to avoid/reduce butter or margarine.
- Vegetables: they should be the main component of our diet, the more various they are, the better it is. Remember: chips and French fries

can NOT be accounted in the “vegetables” section from a nutritional point of view, since they are rich in fats.

- Fruits: pick fruits from each color.
- Whole grains: choose whole grains instead of processed rice and white bread.
- Healthy proteins: fish, legumes, white meat and nuts should be the main source of proteins. Limit/avoid red and processed meat.
- Water: drinking water is the best way to rehydrate. Limit the intake of milk and derived products, juices and sugared drinks.

Varying our meals is the best way to introduce all the nutrients we need to stay healthy.

It is possible to build a proper Healthy eating Plate using foods that are not usually included in our nutritional schedule: foods from different traditions can be mixed to meet the healthy nutritional goals.

Classroom Activity

- Talking with the class, find out which are the traditional foods of different countries and, if you can, their nutritional asset and which part of the plate they fill in.
- Using a paper plate divided into different coloured wedges, explain the suggested proportions of different food during the daily meals. You could try to fill the plate with elements taken from different countries.
- Students could pin the plates in the classroom or in the school canteen to remember the correct composition of main meals.
- If possible, use the Eumove website/application to keep in contact with a class from a foreign country and ask them to explain how their meals

are usually composed: you can exchange ideas and recipes and try to cook something new, then check the results and opinions from both your class and the other.

Healthy homework + Challenges

- After one of your meals, divide a circle representing your plate into different wedges and color them based on what you have eaten. If something is missing, try to eat it in another meal. You could try new foods, too!

References

Harvard T.H. Chan School of Public Health. The healthy eating plate. Available at: <https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>

Food an Agriculture Organization of the United Nations. Food-based dietary guidelines. Available at: <https://www.fao.org/nutrition/education/food-dietary-guidelines/home/en/>

Final Discussion after homework and challenges

- Did you succeed in respecting the correct proportion of nutrients in your meals? Have you tried any new food while using the Healthy eating plate? Which issues did you find (e.g. the food you wished you could cook were not available at the supermarket)? Do you think you would like to enlarge your usual diet after this experience? *What have you learned from the foreign school class you worked with?*

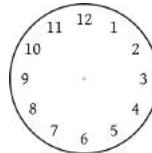
2° LU WEEK TWO: NUMBER OF MEALS PER DAY

GOAL:

Knowledge about the number of meals, how they need to be distributed during the day and the nutrient proportions

Key message:

The recommended number of daily meals is five.



Material: Paper/ 12 h clock drawing, markers	Methods: Initial discussion, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential curricular Links: Science, mathematics, english (or other languages)
---	--	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion

Daily repartition refers to the distribution of nutrients and energy over the different meals of the day, through different food choices and combinations.

Daily repartition of meals is important to provide to our body a constant flow of energy. It also avoids feeling too much hunger during the day.

Learning point

- How to divide the energy intake during the day:
 - Breakfast, Morning snack, Lunch, Afternoon snack, and Dinner.
- For breakfast and snacks and how they should be composed, see Learning Unit about it that will be taught further.(LU 4,5,11)
- For snacks, it is recommended to have a portion of fresh fruit/ a yogurt/ two biscuits (dry biscuits, not cookies).
- Underline how meal schedule could differ from one person to another, depending on their daily need (e.g. sport, fixed school meal time)

Classroom activity

References

World Health Organization. Healthy Diet (2020). Available at: <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>

Draw a clock, color, with different colors for each meal (breakfast, morning snack, lunch, afternoon snack, dinner) the wedge/time interval in which you usually have a meal. Any meals missing?*

*If children cannot read a clock, consider teaching this LU after the curricular teaching of how to read a watch/clock, or explain it simpler, using for example only: morning, afternoon and evening, not hours.

Healthy homework + Challenges

- At home, try to replicate what you did in class, drawing a clock, coloring with different colors for each meal (breakfast, morning snack, lunch, afternoon snack, dinner) the wedge/time interval in which that day you had meals. It is similar to the drawing you did in class?

Final Discussion after homework and challenges

The clock drawn at home it's similar to the one you draw in class? How does it differ and why? You were able to eat 5 meals that day or you skipped one/more or added one or more?

3° LU WEEK THREE: FRUIT AND VEGETABLE PORTIONS

GOAL:

Knowledge about the correct portions of fruits and vegetables and their variety needed to build a balanced diet

Key message:

5 daily portions of fruits and vegetables

Material: White poster, coloured markers	Methods: Initial discussion, laboratory, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential curricular Links: Art, Science, foreign languages
--	---	---------------------------------	------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy eating:

Why is a healthy diet important? During the daily meals, what and in what proportion should be eaten? Explain the benefits of fruits' and vegetables' nutrients, based also on the fruit's colour.

Learning points

- The teacher starts to explain the recommendations about the portions of fruit and vegetables necessary (what is a portion, how many portions)
- 5 portions x day (of both fruit and vegetables)
- 5 fruit/vegetable colours: red, purple/blue, orange/yellow, green and white/brown: eating fruit and vegetables of different colours is not only visually more appealing but also useful to introduce a great variety of nutrients.

References

World Health Organization. (2015). Promoting fruit and vegetable consumption. Available at: <https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/activities/technical-support-to-member-states/promoting-fruit-and-vegetable-consumption>

Harvard Health Blog. Phytonutrients: Paint your plate with the colors of the rainbow. Available at: <https://www.health.harvard.edu/blog/phytonutrients-paint-your-plate-with-the-colors-of-the-rainbow-2019042516501#:~:text=Colorful%20fruits%20and%20vegetables%20can,strengthen%20a%20plant's%20immune%20system.>

Classroom activity

- eat the rainbow: on a white poster the teacher draws the lines of a rainbow, and everyone can draw and colour different fruits and vegetables they like → useful to show the joy of eating different foods!

Healthy homework + Challenges

- At the beginning of the week, draw rainbow outlines as the teacher did in class. Every time you eat a fruit/vegetable colour a segment with the corresponding colour. At the end of the week, any colour is missing?
- One day, draw the outline of your hand and colour each finger with the colours of the fruit and vegetables you ate during the day)

Final Discussion after homework and challenges

At the end of the week, how many days were you able to eat 5 portions of fruit/vegetables? Other days, how many portions of fruit and vegetables have you eaten? What colour were they?

4° LU WEEK FOUR: HEALTHY BREAKFAST AND LABORATORY: BUILD THE BREAKFAST POSTER BOARD

GOAL:

Knowledge about the healthy composition of a breakfast meal

Key message:

Breakfast is one of the most important meals of the day. People should focus on having a good breakfast in order to start the day properly

Material: Posters, A4 papers, colored pencils	Methods: Initial discussion, laboratory, healthy homework	Frequency: 1 lesson	Timing: 30 min. (perday for a week + 30 min. the first day), total 180 min.	Potential curricular Links: This learning unit is not linked to a particular school subject.
---	---	-------------------------------	--	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about healthy breakfast:

- The teacher asks how many students have breakfast each morning to assess briefly how many skip it;
- The teacher shows a few examples of breakfasts through slides or posters and the students use the traffic light method (red: not good, yellow: so and so, green: good) to grade them in good and not a good following their personal knowledge/experience;
- The teacher explains what should be included in breakfast (water or tea, milk or yogurt, fresh fruits or vegetables, nuts, bread/granola/rice/pasta/cereals/..., honey/jam, eggs) and give a few good examples through slides or posters;
- The previous exercise is repeated: the teacher shows again a few examples of breakfasts (slides, posters,...) and students use the traffic light method (red: not good, yellow: so and so, green: good) to grade them in good and not good based on what the teacher explained and showed.

Learning points

- Learn that breakfast is as important as the other meals and should not be skipped;
- Learn what should be included for breakfast (almost all aforementioned nutrients);

- Learn that there can be multiple options and combinations for breakfast;
- Train to compose different types of breakfast and learn from others' inputs.

Classroom activities

First day (Monday)

- Create your breakfast poster dividing the paper into the 5 days of the school week (Monday to Friday):
- Hang the breakfast posters on the walls of the classroom.

Each morning (Monday to Friday)

- Each morning the students draw on an A4 paper what they ate for breakfast and then glue it on their poster on a respective day;
- Each morning the teachers pick a few examples (if possible, positive ones) among the drawings and discuss them with the students, allowing them to use the traffic light method (red: not good, yellow: so and so, green: good)

Healthy homework + Challenge

For one week:

- Based on what learnt at school, try to compose your breakfast meal using some of the suggested ingredients;
- Take a mental picture of the final breakfast meal;
- Try each day to change the colours of your breakfast as suggested in LU n3 and use the advice given in class by the other classmates.

Final Discussion after homework and challenges

Did you succeed in varying the ingredients of your breakfast? Do you think your breakfast this week has been healthier than usual? Which issues did you notice about having a proper breakfast (e.g. lack of time, etc)?

References

Healthy Breakfast: Food Fact Sheet. Available at: <https://www.bda.uk.com/resource/healthy-breakfast.html>

5° LU WEEK FIVE: HEALTHY BREAKFAST AND LABORATORY: WHAT ARE THE TYPES OF BREAKFAST?

GOAL:

Knowledge about the healthy composition of a breakfast meal based on ethnicity/tradition (Linked to LU4)

Key message:

Different people may have different habits, including those about food. We can learn from each other through sharing knowledge about food and improving our good habits.

Material: Posters, A4 papers, colored pencils, food	Methods: Initial discussion, laboratory	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: This learning unit is not specific to a particular school subject.
---	---	---------------------------------	------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about healthy breakfast

- The teacher asks how many students have breakfast each morning and how is traditionally prepared in their family
- Students explain how breakfast is prepared in their family during the week and the weekends, if differences are present

Learning points

- Learn that breakfast can differ based on traditions and cultures, as food is an important part of each culture
- Learn that there can be multiple options and combinations for breakfast
- Train to compose different types of healthy breakfast and learn from others' traditions
- Exchange ideas and learn from other traditions/cultures

Classroom activities

- Students draw the breakfast their family have; they can draw multiple drawings if breakfasts differ, especially between weekdays and weekends

References

Healthy Breakfast: Food Fact Sheet. Available at: <https://www.bda.uk.com/resource/healthy-breakfast.html>

- Hang the breakfast posters on the walls of the classroom
- The teachers pick a few examples (if possible, positive ones) among the drawings and discuss them with the students, allowing them to use the traffic light method (red not good, yellow so and so, green good)
- If students want, they can explain why they have that traditionally breakfast at home; if they don't know, they can ask at home and let their classmates know another day

Healthy homework + Challenges

- try a different breakfast: get inspired from other classmates and buy some new ingredients to prepare a new breakfast with your family
- try to differentiate and change the ingredients you normally use
- if you have any doubt, ask the classmates whose breakfast inspired you and consider asking them for a recipe or for help in preparing the meal

Final Discussion after homework and challenges

Did you enjoy changing your habits for a while? What have you learnt from this experience?

6° LU WEEK SIX: HOW MUCH WATER SHOULD I DRINK?

GOAL:

Knowledge about the correct amount of water that should be drunk every day to be hydrated

Key message:

It's important to drink the appropriate amount of water during the day on the basis of age and PA, preferring water to other types of drinks.

Material: Water bottle, various dimensions, other sodas, energy drinks, etc	Methods: Initial discussion, laboratory, healthy homework	Frequency: One lesson	Timing: 30 minutes	Potential Curricular Links: Math, Science
---	---	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Water Intake:

Why is drinking water important? Explain the average percentage of water in a person's body is around 60%. Where water can be found in drinks and food?

Learning point

- The teacher starts to explain the recommended levels of water intake per day
- Hints about different types of drinks and their nutritional profile
- Give tips to drink more during the day
- Teach about tap water and the importance of recyclable water bottles
- Teach about different intake of water needed based on age and PA

References

Choose water for Healthy Hydration. Available at: <https://www.healthychildren.org/English/healthy-living/nutrition/Pages/Choose-Water-for-Healthy-Hydration.aspx>

Classroom activity

- Discussion about the different types of drinks and their nutritional profile (i.e. coke, tè, fruit juice, energy drink,...) → ranking from best to worse?

Healthy homework + Challenges

- Ask students to bring to school their water bottles (so even those who don't have one can use one extra from their classmates) and decorate them: make them nice so it is more fun to carry them around
- Keep a daily diary for one week writing down how many water bottles/liters per day they were drinking; check at the end of the week if everyone was hitting their goal

Final Discussion after homework and challenges

Was I able to increase the daily amount of water to drink? If not, why?

7° LU WEEK SEVEN: LIMITING SUGAR- SWEETENED BEVERAGE AND FOOD CONSUMPTION

GOAL:

Knowledge about the amount of sugar in daily beverages and food, the types of sugar and the consequences they have on health. Develop critical awareness and learn about alternatives to sugary foods and beverages

Key message:

Choose beverages and food that contain the lower quantity of sugar

Material: Various types of sugar-sweetened beverage and food, sugar cubes/ sachets of sugar/spoons of sugar. Table and Cards of beverages and food.	Methods: Initial discussion, laboratory, healthy homework, challenge	Frequency: Two lessons	Timing: 60 minutes	Potential curricular Links: Science
---	--	----------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about sugar-sweetened beverages:

Very limited consumption of foods high in fat, sugar or salt and low in micronutrients e.g. crisps, confectionery, sugary drinks.

What are the different types of sugar-sweetened beverages that are consumed during the day (water, tea, chocolate, cola, sparkled drinks; fruit juices etc.)

Learning point

- The objective of this action is to make students aware of the types of sugar that exist and also of the amount of extrinsic sugar present in certain beverages and in foods that they consume regularly.
- Recommended Consumption: no more than 25 grams of free sugars per day (or 5% of total energy intake) (*Guideline: Sugars Intake for Adults and Children.* (2015). World Health Organization.)

Classroom activity

- The teacher starts the lesson explaining what is the quantity of sugar contained in different types of sugar-sweetened beverages and food; then a round of questions.
- For Example: How much sugar do you think Cola contains? How much sugar biscuit contain?
- Explain how the consumption of beverages and food with high contents of sugar may affect health.

- Talking about the importance of the “healthy way” to consume sugar-sweetened beverages and food during the day? (how often do you drink beverages that contain a high quantity of sugar)
- Which kind of beverage do you think is better when you are thirsty?
- Once this reflection on the questions asked is complete, the tutor can explain the types of sugar that exist: free sugar and intrinsic sugar. It is also important for students to know the recommended intake of free sugar: 25 grams of free sugar per day
- Put on the main table of the room the beverage brought from home for that day and try to categorize them based on their sugar content. The teacher puts for every beverage the matching quantity of sugar cubes/ sachets of sugar/spoons of sugar.
- Discuss which ones are better to be drunk often and which ones sometimes.

Healthy homework + Challenges

- During the shopping at the supermarket, choose the beverages that contain the lower quantity of sugar. For example: compare different kinds of fruit juices.
- At home, prepare with parents healthy/genuine beverages instead of common fruit juice that you can buy at the supermarket (i.g. freshly squeezed fruit juice/smoothie/)

Final Discussion after homework and challenges

Was I able to consume in a healthy way sugar sweetened beverages?
If not, why not?

Drink (12-ounce serving)	Teaspoons of Sugar	Calories
Tap or Bottled Water	0 teaspoons	0
Unsweetened Tea	0 teaspoons	0
Sports Drinks	2 teaspoons	75
Lemonade	6 ¼ teaspoons	105
Sweet Tea	8 ½ teaspoons	120
Cola	10 ¼ teaspoons	150
Fruit Punch	11 ½ teaspoons	195
Root Beer	11 ½ teaspoons	170
Orange Soda	13 teaspoons	210

https://www.cdc.gov/healthyweight/healthy_eating/drinks.html

STOP. RETHINK YOUR DRINK. GO ON GREEN.



<https://www.hsph.harvard.edu/nutritionsource/healthy-drinks/beverages-public-health-concerns/>

References

World Health Organization (2015). Guideline: Sugars intake for adults and children. Geneva: World Health Organization. Retrieved from <https://www.who.int/publications/i/item/9789241549028>.

Plates, pyramids, planet. Developments in national healthy and sustainable dietary guidelines: a state of play assessment. Food and Agricultural Organizations of the United Nation. Available on <https://www.fao.org/documents/card/en/c/d8dfeaf1-f859-4191-954f-e8e1388cd0b7/>

8° LU WEEK EIGHT: SEASONALITY OF FOODS

GOAL:

Knowledge about the seasonality of different foods across the year and building a healthy diet using locally sourced produces

Key message:

Consume locally sourced foods

Material: Grocery flyers, scissors, white poster (x4)	Methods: Initial discussion, laboratory, healthy homework	Frequency: 4 lessons x the year (possibly at the beginning of each season)	Timing: 60 min (first lessons) – 30 min (second, third and fourth lessons)	Potential curricular Links: Geography, Science, Art, History
---	---	--	--	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy eating

First lesson: talking about the importance of consuming locally sourced foods, in order to:

- reduce the amount of processed goods and increase the fresh produce intake
- reduce the impact of our diet on carbon footprint and plastic usage (packaging) (see also LU 9)
- consume fresher and more nutritious food compared to food consumed out of season.

Local food is also generally better tasting, due to its harvesting closer to the peak of ripeness (especially for vegetables and fruits)

Learning point (x4) (spring, summer, autumn, winter)

- what fruits and vegetables are in season in your country right now (Due to different geographical locations, teachers should see reference 2 for suggestion about seasonal fruits/vegetables)

References

Food and Agriculture Organization of the United Nations. Plates, pyramids, planet. Developments in national healthy and sustainable dietary guidelines: a state of play assessment (2016). Available at: <https://www.fao.org/documents/card/en/c/d8dfeaf1-f859-4191-954f-e8e1388cd0b7/>

UFIC. Explore Seasonal Fruit and Vegetables in Europe. Available at: <https://www.eufic.org/en/explore-seasonal-fruit-and-vegetables-in-europe>

EUFIC. Are seasonal fruit and vegetables better for the environment? Available at: <https://www.eufic.org/en/healthy-living/article/are-seasonal-fruit-and-vegetables-better-for-the-environment>

- Try to give some examples of culturally typical recipes from where you live that use seasonal food.

Classroom activities

- build with the help of the teacher a poster with seasonal food, using images cut out from the grocery flyers and integrate with drawings if anything is missing. Hang the poster in the classroom to remind what should be eaten during the season

Healthy homework + Challenges

- try to eat at least one meal a day with only seasonal and local sourced foods, using the appropriate food categories proportions as shown in LU 1

Final Discussion after homework and challenges

Compare what food you ate during the week with what is on the poster you did with your teacher. Is there something you didn't eat or never tried?

9° LU WEEK NINE: FOOD SUSTAINABILITY

GOAL:

Knowledge about the food sustainability

Key message:

Prefer sustainable food

Material: Various types of grocery flyers	Methods: Initial discussion, laboratory, healthy homework, challenge	Frequency: One lesson	Timing: 60 minutes	Potential curricular Links: Geography, Science
---	--	---------------------------------	------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about sustainable food

What does sustainability mean? Definition: "The use of resources at rates that do not exceed the capacity of the Earth to replace them". One way to reduce the use of resources and also eat more nutrient dense food is to eat locally and seasonally (see LU 8)

Which kind of Packaging is sustainable? For example, compostable is better than recyclable, but we are still producing waste. Eating locally reduces the distance food needs to travel and also the packaging needed.

Learning point

- What does sustainable food mean?
- The foods we eat not only affect our health, but also the health of the environment
- A lot of resources are needed to produce food (water, energy for transportation, CO2 production, land usage, fertilizers etc)
- Which kind of food do you think is more sustainable? Differences between different classes of food: fortunately, a low-impact diet can be achieved by following the approximate food proportions of the food pyramids: consume little meat (especially processed meat),

References

EUFIC. Are seasonal fruit and vegetables better for the environment? Available at: <https://www.eufic.org/en/healthy-living/article/are-seasonal-fruit-and-vegetables-better-for-the-environment>

World Health Organization. A healthy diet sustainably produced. Available : <https://www.who.int/publications/i/item/WHO-NMH-NHD-18.12>

cheese, fish, dairy products while eat plenty of fruit, vegetables, legumes and vegetables.

Classroom activities

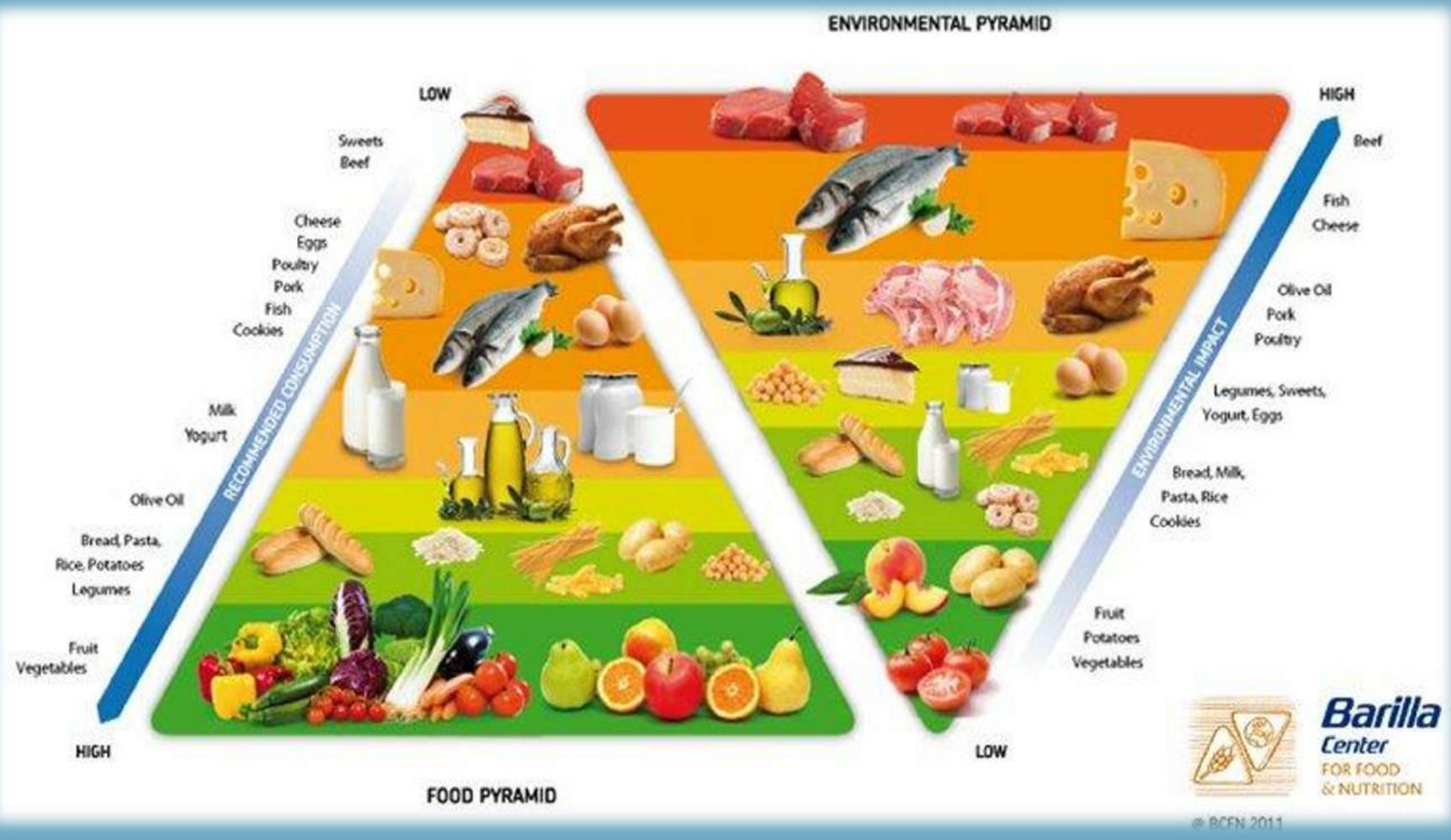
- Global sustainability: Discuss which kinds of food are sustainable? (meat, fish, bread, fruit, vegetable?)
- Local sustainability: Take from a supermarket flyers and check out where food comes from? Try to check on a map, how many kilometers (CO2 consumption) far was the production of that food? Are their packaging sustainable?

Healthy homework + Challenges

During the shopping at the supermarket look at the tags. Where does food come from? Is it far from your home? (CO2 consumption). Try to choose foods that are produced both locally and seasonally.

Final Discussion after homework and challenges

Was I able to choose food produced locally and seasonally? If not why no?



Talk about the importance of reducing food waste.

Healthy food is sustainable food: recommendations for healthy eating.

At present, few food guidelines take sustainability issues into account. However, there is growing evidence that a win-win situation for human health and the environment is possible, and some common messages are emerging to promote human and environmental well-being (15):

- Eat a wide variety of foods from different food groups, with an emphasis on plant-based foods.
- Consume only the calories you need to meet your energy needs. Overeating is bad for human and global health.
- Choose fresh, locally grown and home-prepared foods. Avoid highly processed foods, especially those that are high in fat, sugar or salt and/or low in vitamins, minerals and fibre. It is important to check food labels.
- Eat at least two to three servings of fruit per day, preferably fresh, seasonal and locally produced. The WHO recommends a combined consumption of more than five servings (400 grams) of fruit and vegetables per day (10).
- Eat at least two to three servings of vegetables a day. Choose vegetables grown in the field rather than in greenhouses, or vegetables that are preserved using sustainable methods (such as fermentation) and do not require fast, energy-consuming transport. Reduce food waste by also eating "ugly" vegetables and fruit: aesthetic imperfections do not mean that the produce is less nutritious.
- Potatoes, sweet potatoes, cassava and other starchy roots do not count as vegetable servings, but are present in a healthy diet, preferably in minimally processed forms.
- Cereals should be consumed primarily as whole grains - such as maize, oats, wheat or unprocessed brown rice - rather than in refined form (e.g. white rice, bread or pasta).
- Consume moderate amounts of milk and milk products (or milk substitutes) and choose low-fat, low-salt and low-sugar versions.
- Limit consumption of red meat and processed meat products (10) - some international national bodies suggest limiting consumption to about 500 grams of cooked meat per week, with very small amounts, if any, of processed meat products (21,22,23,24).
- Eat fish and seafood about twice a week, preferably from certified/recognised sustainable sources.
- Eat pulses regularly. Dried beans, peas and lentils are excellent sources of protein, fibre and other nutrients, and are naturally low in fat. Pulses are a good alternative to meat and can play a key role in the healthy, sustainable diets of the future.
- Include modest amounts of fats and oils, mainly of vegetable origin, and preferably containing unsaturated fats. Avoid industrially produced trans fats (e.g. partially hydrogenated oils) found in processed foods, fast food, snack foods and fried foods. Use healthier cooking methods, use vegetable oils, boil, steam or bake instead of frying.
- Drink tap water (or other improved sources such as boreholes and protected wells) in preference to other beverages, especially sweetened beverages. Consumption of fruit juices should also be limited as they contribute to the presence of free sugars; for example, a 150 ml glass of unsweetened orange juice contains about 15 g of free sugars (3).
- Prepare food according to hygienic practices: wash hands before handling food and after using the toilet, disinfect surfaces and protect them from insects, pests and animals, separate raw and cooked food, cook food thoroughly and store it at safe temperatures, and use clean water to wash raw food (25).

10° LU WEEK TEN: LABEL OF MY SNACKS, WHICH IS THE BEST FOR MY HEALTH?

Goal:

- How to read nutrition labels information.
- Know if foods are more or less healthy based on their ingredients listed on the label

Key message:

Education which helps comprehension and use of nutrition labels have the potential to improve the impact of this information on dietary health. Education helps in a correct selection of products. Students will be more aware of their daily food choices based on nutritional labels, based on the composition of macronutrients, the salt content and the quantity of each ingredient that determines the quality of the product

Material: Pre-packaged snacks (crackers, bars, chips, biscuits, etc.) and cans of fizzy drinks.	Methods: Initial and final discussions, classroom activity, healthy homework, challenge.	Frequency: One lesson.	Timing: 60 minutes.	Potential curricular links: Science, Math, English
---	--	----------------------------------	-------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial discussion about nutrition labels

Teacher asks the children: do you usually read the nutrition labels? Do you know how to read the nutrition labels? Do you know why is it important to read the nutrition labels?

Learning point

- Teacher explains why it is important to read the nutrition labels of food and drink.
- Teacher explains how to read the nutrition labels.
- Teacher explains the fundamental concepts for a balanced diet and lists the most harmful ingredients to pay attention to.

Classroom activity

- Divide the class into groups, give each group the same set of similar pre-packaged snacks or cans, ask the children to read the nutrition labels and decide what is the healthy choice.
- Teacher chooses some food items (i.e. biscuits, crackers, cereals, yogurt) or drinks (i.e. fruit juice, coke, tea) and gives them to each

group. The group, without looking at any labels, try to come to a consensus on the items they think has the highest content of: salt, sugar, fat, carbohydrate, protein, minerals/nutrients, calcium.

- Think with your classmates about a healthy and balanced snack according to the indications received in class to propose for the school break.

Healthy homework + Challenge

- Go to the supermarket with your parents or guardians, choose a food among your favourites (i.e., yogurt, biscuits etc.), select two or more similar items, read the nutrition labels, check the sugar, fat and salt content and decide what is the healthy choice.
- Choose a food that you usually eat at home for breakfast or for snack and analyze its nutrition label based on what you learned in class. Is it healthy food or not?
- Try to read the salt content of snacks and the sugar content of chocolate as much as you can.

Final discussion after homework and challenges

I read food labels of pre-packaged foods/I did not. If no, why not?

How to read the nutrition label step by step:

1. Start by checking how the information is reported. The ingredients are listed in a precise order: from the most present to the least present in quantity. Another important thing is to check if the information given is based on standard weights of 100 grams or on a single portion or other.
2. Check the weight of the portions/rations and compare it with what you are actually eating.
3. Check the calories that the portion of food you are about to eat will provide you, to compare them with the total calories which, on average, must not be exceeded.
4. Monitor the amount of nutrients you should limit. Some labels highlight the percentage of the daily nutrient requirement provided by each serving.
5. Make sure your food provides you with a sufficient amount of essential nutrients such as vitamins, calcium, iron and fiber.

References

- Moore, S. G., Donnelly, J. K., Jones, S., & Cade, J. E. (2018). Effect of Educational Interventions on Understanding and Use of Nutrition Labels: A Systematic Review. *Nutrients*, 10(10), 1432. <https://doi.org/10.3390/nu10101432>
- UNICEF. (2019). The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world. Available on <https://www.unicef.org/reports/state-of-worlds-children-2019>
- World Health Organization. (2020). Nutrition action in schools: a review of the evidence related to the nutrition-friendly schools initiative (Geneva, Sw). Available on <https://www.who.int/publications/i/item/978924151696>

11° LU WEEK ELEVEN: EATING HEALTHY SNACKS

Goal:

Knowledge about the nutritional component of snacks and proper consumption of them

Key message:

Having a good and healthy snack could be tasty, funny, and environmentally friendly

Material: Various types of snacks	Methods: Initial discussion, laboratory, healthy homework	Frequency: One lesson	Timing: 30 minutes	Potential Curricular Links: This learning unit is not specific to a particular school subject.
---	---	---------------------------------	------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about Snacks Intake

- What are the different types of snacks that are eaten during the day (fruits, sandwiches, chocolates, chips, yogurts)?
- Which snacks do students prefer?
- What do students consider to be a healthy snack?

Learning point

- What are the different types of healthy snacks that could be eaten during the day (fruits, sandwiches, chocolates, chips, yogurts)?
- Which are the snacks with more and less nutritional components?
- How much is on average a portion of food for a snack (hand size)?
- According to WHO, sugars intake can be reduced by limiting the consumption of foods and drinks containing high amounts of sugars, such as sugary snacks, candies and sugar-sweetened beverages (i.e. all types of beverages containing free sugars – these include carbonated or non-carbonated soft drinks, fruit or vegetable juices and drinks, liquid and powder concentrates, flavoured water, energy and sports drinks, ready-to-drink tea, ready-to-drink coffee and flavoured milk drinks); and eating fresh fruit and raw vegetables as snacks instead of sugary snacks.

- According to WHO, fat intake, especially saturated fat and industrially-produced trans-fat intake, can be reduced by limiting the consumption of pre-packaged snacks (e.g. doughnuts, cakes, pies, cookies, biscuits and wafers) that contain industrially-produced trans-fats.
- According to WHO, salt intake can be reduced by limiting the consumption of salty snacks.

Classroom activities

- Students put on the main table of the room the snacks brought from home for that day and try to categorize them based on their nutritional components (see also LU n. 1 on Nutrition The Food Pyramid).
- Discuss which snacks are better to be eaten often and which ones only once in a while.
- Students try to draw a table about the amount of sugar and fat contained in the snack analyzed.

Healthy homework + Challenges

- Prepare and eat snacks with better nutritional components each day, following the nutritional indication learned.
- Keep a “drawing diary” of your snacks: try to draw the snack and note the amount of sugar and fat contained.

Final Discussion after homework and challenges

- Was I able to eat healthy snacks during the day or not? If no, why not?
- Report the results of the challenge. Did you succeed in eating healthy snacks? Which difficulties did you have? Try to compare the amount

References

World Health Organization. Healthy Diet (Available at: <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>)

of sugar and fat contained in the first snack you analyzed in class (before doing the healthy homework) with those of the snacks you eat during this week: how different are they? Tips: to make it easier to compare the snacks, create a table reporting “fat” and “sugar” as columns and stick on the side of the lines the label of the snacks. If there is no label, draw what you eat.

12° LU WEEK TWELVE: EAT HEALTHY TO SLEEP WELL

Goal:

Understanding the relationship between good sleep quality and healthy nutrition

Key message:

A proper dinner can improve your sleep quality and help you to fall asleep

Material: Poster	Methods: Initial discussion, Content of guidelines on healthy nutrition and sleep hygiene, Group activity, Healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: This learning unit is not specific for a particular school subject.
----------------------------	--	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Nutrition

- Discussion between students about their usual dinner.
- Discussion between students about nutrition habits related to a good rest. Focus on the link between nutritional habits and sleep quality. A healthy diet may improve the quality of your sleep; on the other hand, people who don't get enough sleep are more likely to increase their food consumption. In fact, sleep deprivation seems to provoke a tendency to select high-calorie foods with less nutritional benefit and create a greater risk of weight gain.

Learning points

- Prefer nutritious but light dinner instead of large meals, and have dinner at least 3 hours before bedtime. Eat a light, healthy snack if you get hungry at night.
- Avoid, in particular before bedtime, sugars (both in foods or drinks) and substances like theine, ginseng, caffeine (e.g. coke) or chocolate (contains stimulating substances).
- These foods have an exciting effect that may keep you up at night since they drop serotonin and melatonin production, which guarantee the correct sleep-wake rhythm. Also tyramine, contained in aged cheese, is known to have an exciting effect. In general, before bedtime you should avoid consuming really fatty, salted, spicy foods or meals containing a large amount of proteins: these foods take a very long time to be digested and stimulate gastric acid production.

- Reduce your fluid intake several hours before sleep. Herbal teas can help you relax and fall asleep, but it's better to drink them far from bedtime, otherwise you could have to wake up to go to the toilet.
- Try not to skip dinner: hypoglycemia-related hunger could make it difficult to fall asleep.

Classroom activities

- Find out which foods promote good sleep quality.
- Create a poster with the ideal foods for a balanced dinner: a portion of whole grain cereals, a not excessive portion of proteins and little fats (such as legumes and fish), a portion of seasonal vegetables, a portion of fresh or dried fruit. A balanced dinner that promotes sleep should include:
 - A portion of whole grains such as rice, oats, barley and whole wheat (whole wheat pasta and wholemeal bread).
 - Protein foods with low quantities of fats such as, for example, legumes and fish (not excessive quantities).
 - A portion of seasonal vegetables, especially pumpkin, asparagus, cabbage, lettuce, spinach, artichokes (foods rich in minerals as potassium, magnesium, calcium and selenium).
 - A portion of fresh fruit (apple, kiwi, cherries, apricots and peaches) or a portion of dried fruits (3 walnuts or 8 walnuts or 8 almonds).
 - As condiments: extra virgin olive oil, aromas such as basil, marjoram, oregano and seeds (useful especially sesame seeds, rich in tryptophan, and pumpkin seeds, rich in magnesium).

Healthy homework + Challenges

- Following the tips of your teacher and the poster you created at school, decide what to cook for dinner.
- Cook a healthy dinner with your family.

Final Discussion after homework and challenges

Was I able to follow the teacher's tips about the ideal dinner? If not, why not?

References

American Academy of Sleep Medicine - Sleep Education. Available at: <https://www.sleepeducation.org>)

Grandner, M. A., Jackson, N., Gerstner, J. R., & Knutson, K. L. (2014). Sleep symptoms associated with intake of specific dietary nutrients. *Journal of sleep research*, 23(1), 22–34. <https://doi.org/10.1111/jsr.12084>

Greer, S. M., Goldstein, A. N., & Walker, M. P. (2013). The impact of sleep deprivation on food desire in the human brain. *Nature communications*, 4, 2259. <https://doi.org/10.1038/ncomms3259>

3

LEARNING UNITS ABOUT
PHYSICAL ACTIVITY AND
SEDENTARY BEHAVIOUR
FOR PRIMARY SCHOOL

1° LU WEEK ONE: WHAT IS PHYSICAL ACTIVITY?

GOAL:

Knowledge about WHO recommendations toward PA in children and adolescents



Key message:

WHO recommends for children and adolescents to perform at least 60 minute of Moderate to Vigorous PA

<p>Material: Happy feet log Daily journal for children and parents. Collect each experience, feeling, describing the activity. Using smartwatch to monitor the steps counts and physical activity.</p>	<p>Methods: Initial discussion, content of WHO guidelines, Group activity, healthy homework</p>	<p>Frequency: One lesson</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: Science, History</p>
---	--	---	--------------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about physical activity

Talking about what is physical activity? How much time does everyone spend in physical activity during the day? (Raise your hand) But how many minutes of PA every day? Draw a graph about the student answers.

Learning points

- Teacher starts to explain the recommended levels of PA necessary for each age groups (children, adolescents, adult)
- Explain that every move counts for health www.everymove
- 60 minute every day of PA are recommended for children and adolescent from 5 to 17 aged
- Unstructured PA (e.g., active commuting to school, walking, riding, active play with friends)
- Talking about timing, frequency and duration for PA.

References

Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public health reports (Washington, D.C. : 1974)*, 100(2), 126-131.

World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Available at <https://www.who.int/publications/i/item/9789240015128>.

U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.

Classroom activities

- Let's choose one physical activity and share it with the class.
- Create/understand how to fill the happy feet log day by day for two weeks

Healthy homework + Challenges

- Doing 15 minutes of daily extra-school walking (examples: walk to the supermarket, get off the bus first and walk the last few stops, do not use the elevator, ...)
- Trying to do as much PA during extra school as you can. After two weeks teacher nominates the most active children

Final Discussion after homework and challenges

I was able to increase the PA level/ I was not able. If no, why not?

2° LU WEEK TWO: LET'S TALK ABOUT INTENSITY

Goal:

Knowledge about the Mechanism of Heart Beat during different PA intensities



Key message:

WHO recommends for children and adolescents to perform at least 60 minute of Moderate to Vigorous PA

Material: Diary; smartwatch; Jar; Balloons; Straws	Methods: Initial discussion, laboratory, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: Science, Math
---	---	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Intensity

Talking about what is the intensity? How many intensities do you know? (Raise your hand)

Learning points

- Explain the heart beat using a jar
- Explain the intensity using the Talk-Sing Test.

Classroom Activities

- All the children bring to school a jar, some water balloons, some drinking straws. A heart pump is built and its operation explained.
- The heart pump is activated during PA differently based on intensity but what is the intensity of PA?

References:

World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Retrieved from <https://www.who.int/publications/i/item/9789240015128>.

- Laboratory: Light-walking (singing); Moderate-running (talking); Vigorous-jumping (breathing).

Healthy homework + Challenges

- Write a report/Drawing indicating the day, the time, the type of activity performed, its duration and intensity.
- Try to do as much PA during extra school as you can. After a week teacher nominates the most active children

Final Discussion after homeworks and challenges

I was able to break my sedentary time/I was not. If no, why not?

3° LU WEEK THREE: WHAT IS SEDENTARY BEHAVIOR?

Goal:

Knowledge about WHO recommendation toward PA in children regarding limit the amount of time spent being sedentary

Key message:

It is recommended that:

- > Children and adolescents should limit the amount of time spent being sedentary, particularly the amount of recreational screen time.

Strong recommendation, low certainty evidence



<p>Material: Active breaks Experience active breaks that can literally break the lesson/any kind of sedentary time. Collect each experience, feeling, describing the activity</p>	<p>Methods: Initial discussion, content of WHO guidelines, Group activity, healthy homework</p>	<p>Frequency: Two lessons</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: Science</p>
--	--	--	--------------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Physical activity

Talking about what is Sedentary behaviour? How much time does everyone usually spend in sedentary behaviour during the day? (Raise your hand) What do you usually do in your sedentary time (tv, gaming)?

Learning points

- Teacher starts to explain that every move counts for health!
- Explain the risk related to sedentary behaviour

References

- Chaput, J. P., Willumsen, J., Bull, F., Chou, R., Ekelund, U., Firth, J., Jago, R., Ortega, F. B., & Katzmarzyk, P. T. (2020). 2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5-17 years: summary of the evidence. *The international journal of behavioral nutrition and physical activity*, 17(1), 141. <https://doi.org/10.1186/s12966-020-01037-z>
- World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Retrieved from <https://www.who.int/publications/i/item/9789240015128>.
- Tremblay, M. S., Carson, V., Chaput, J. P., Connor Gorber, S., Dinh, T., Duggan, M., Faulkner, G., Gray, C. E., Gruber, R., Janson, K., Janssen, I., Katzmarzyk, P. T., Kho, M. E., Latimer-Cheung, A. E., LeBlanc, C., Okely, A. D., Olds, T., Pate, R. R., Phillips, A., Poitras, V. J., ... Zehr, L. (2016). Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behaviour, and Sleep. *Applied physiology, nutrition, and metabolism*, 41(6 Suppl 3), S311-S327. <https://doi.org/10.1139/apnm-2016-0151>

- Talking about the balance between sedentary and active spent time (timing, frequency and duration for PA to break sedentary time).

Classroom activities

- Understand how to do an active break (try to sit up and jump)
- Let's invent an active break, and share it with the class.

Healthy homework + Challenges

- Each time you spent 1h in sedentary behavior (sitting at the pc), try to do an active break (examples: sit up and jump for 30 seconds)
- Write notes about the numbers and type of chosen active breaks

3° LU WEEK THREE: WHAT IS SEDENTARY BEHAVIOR?

Goal:

Knowledge about recommendation toward in children regarding limit the amount of time being sedentary particularly the amount of recreational screen time

Key message:



SIT SEDENTARY BEHAVIOUR

No more than two hours per day of free time spent using electronic devices.

Material: Diary	Methods: Initial discussion, content of the guidelines, healthy homework and challenge	Frequency: One lesson	Timing: 30 minutes	Potential Curricular Links: Science
---------------------------	--	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Physical activity

Talking about the time spent using electronic devices, pc or watching tv. How much time does everyone usually spend sitting using electronic devices, pc or watching tv (Raise your hand). Draw a graph to report the answers.

Learning points

- Teacher starts to explain that every move counts for health!
- Explain the risks related to screen time sedentary behavior

Classroom activities

- Gather suggestions for reduction time spent watching tv or using video games
- Breaking up long periods of sitting as often as possible.

Healthy homework + Challenges

- Reported in the diary the numbers of hours spent using electronic devices in a week
- School Contest: less hours of the use of electronic devices, more healthy points for alternative proposals for reduction. We calculated the healthier class.

Final Discussion after homeworks and challenges

I was able to reduce my sedentary time/I was not. If no, why not?

Collection of suggestions for alternatives to electronic gaming while sitting - create a collection of games (interviews with grandparents, parents: what did they play where and with whom).

References

- Chaput, J. P., Willumsen, J., Bull, F., Chou, R., Ekelund, U., Firth, J., Jago, R., Ortega, F. B., & Katzmarzyk, P. T. (2020). 2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5-17 years: summary of the evidence. *The international journal of behavioral nutrition and physical activity*, 17(1), 141. <https://doi.org/10.1186/s12966-020-01037-z>
- World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Retrieved from <https://www.who.int/publications/i/item/9789240015128>.
- U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.
- Tremblay, M. S., Carson, V., Chaput, J. P., Connor Gorber, S., Dinh, T., Duggan, M., Faulkner, G., Gray, C. E., Gruber, R., Janson, K., Janssen, I., Katzmarzyk, P. T., Kho, M. E., Latimer-Cheung, A. E., LeBlanc, C., Okely, A. D., Olds, T., Pate, R. R., Phillips, A., Poitras, V. J., ... Zehr, L. (2016). Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behaviour, and Sleep. *Applied physiology, nutrition, and metabolism*, 41(6 Suppl 3), S311-S327. <https://doi.org/10.1139/apnm-2016-0151>
- Owen, N., Healy, G., Matthews, C. & Dunstan, D. (2010). Too much sitting: The population health science of sedentary behavior. *Exercise and Sport Sciences Reviews*, 38(3), 105-113. <https://doi.org/10.1097/JES.0b013e3181e373a2>

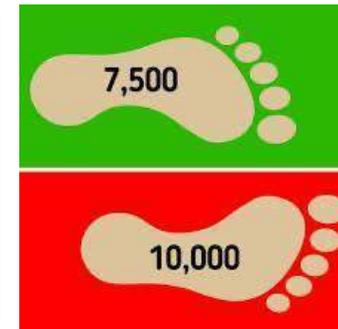
5° LU WEEK FIVE: LET'S TALK ABOUT ACTIVE COMMUTING

GOAL:

- Knowledge of the use of Active Commuting, around the city, as a healthy lifestyle (Walking, Running, Cycling).
- Getting around on foot (walking and running) with different intensity and in safety condition (walkway lane, respect of traffic rules).
- Getting around by bike in safety condition (wearing a helmet, on bike lane, respect of traffic rules)

Key message:

Active Commuting is easy and sustainable, one of the ways to achieve WHO PA recommendations for children and adolescents to perform at least 60 minute of Moderate to Vigorous PA or 7000 to 10000 daily steps.



<p>Material: Happy feet log, Borg Scale</p>	<p>Methods: Participatory lectures on the topic of Active Commuting; applied lessons in the gym; recording of personal data in the diary</p>	<p>Frequency: Two lessons</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: Science: Cardiovascular system; Physical Education: walking/running/cycling, correct posture, different applications and intensity; Geography: study of city maps</p>
--	---	--	--------------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Active Commuting as Physical activity

Discussion about active commuting at various intensities and its contribution to cardiovascular health. Reflection on the sustainability of walking/running/cycling in all environments, spaces, time and conditions.

Learning points

What is the meaning of Active Commuting?

- Teacher start to explain why to be active is important for children
- How many steps children have to do in a day if they walking or running
- How many kilometres to do in a day with the bike

Classroom activities

- Walking/running/cycling at different speeds in playful activities (paths, transporting objects, games in pairs with a partner with eyes closed) - measurement of heart rate after a walking/running/cycling at low, medium and high intensity - application of Borg Scale.

References

- World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Available at <https://www.who.int/publications/i/item/9789240015128>.
- U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.
- Daily Steps and Health | Walking Your Way to Better Health. Available at <https://www.acsm.org/blog-detail/acsm-certified-blog/2019/06/14/walking-10000-steps-a-day-physical-activity-guidelines>

- study of road maps and distance calculations on a small scale - search for one's home and positioning on the map - hypothesis of some routes from home to.... and back.

Healthy homework + Challenges

- During the week or on the weekend, calculate with dad and mom three routes on the city map. Realise the three routes by walking or running or cycling: 1) route taken at a leisurely pace (e.g. go to the supermarket), 2) route taken at a medium-high speed (e.g. go to the parish or the nearest park), 3) route taken at a high speed (walking/running/cycling with parents).
- Write down in the personal diary: a) the three paths made indicating the routes, outward and return, to and from home; b) note the heart rate at the start, at the end of the outward journey, at the end of the return; c) note the self-evaluation with the Borg scale; d) note the feelings experienced in the three paths

Final Discussion after homework and challenges

Circle time about the home challenges, is it feasible? Do you enjoy homeworks?

I was able to increase the number of steps in a day? If no, why not?

ATTACHMENTS: EXAMPLE OF A DIARY PAGE

NAME SURNAME	FEMALE	MALE	AGE	CLASS
QUESTIONS BEFORE THE ACTIVITIES				
Are you aware of how important is the active commuting?	1	2	3	4 5 6 7 8 9 10
Can you control walking/running/cycling better or worse than other skills?	1	2	3	4 5 6 7 8 9 10
Can walking/running/cycling affect your heart?	1	2	3	4 5 6 7 8 9 10
ACTIVITIES				
Day and place	1 low intensity	2 Medium intensity	3 high intensity	Borg Correspondence
	1 route	2 route	2 route	Borg correspondance
	BPM at start	BPM at start	BPM at start	1: ; 2: ; 3:
	BPM andata	BPM andata	BPM andata	1: ; 2: ; 3:
	BPM return	BPM return	BPM return	1: ; 2: ; 3:
	Velocity	Velocity	Velocity	
With parent	Vel.1	Vel.1	Vel.1	Borg average
With parent	Average bpm	Average bpm	Average bpm	1: ; 2: ; 3:
QUESTIONS AFTER THE ACTIVITIES (1=low, 10=high)				
Do you understand the importance of active commuting?	1	2	3	4 5 6 7 8 9 10
Do you feel more in control on walking/running/cycling?	1	2	3	4 5 6 7 8 9 10
At what maximum speed can you walk/run and with how many heartbeats per minute?	1	2	3	4 5 6 7 8 9 10
With the parent	Impressions and personal sensations on the three routes Description:			
HOW DO YOU FEEL, COMPARED TO Active commuting AFTER THIS EXPERIENCE?				
				

6° LU WEEK SIX: LET'S TRY TO HOPPING

GOAL:

- Objective : self-awareness; Knowledge of binary and ternary rhythm.
- Skills: Hopping with at least one binary and one ternary tempo - respiratory control and defatigue
- Competence: awareness of rhythmic control of jumping in relation to speed, number of repetitions, or application time

Key message:

Hopping is easy and sustainable activity, activity that can be done anywhere, even at home in a small space and can also be done by dancing.



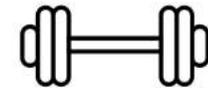
ACSM and CDC Recommendations



150 minutes of moderate intensity aerobic activity per week

2X Per Week

Strengthening activities 2 days a week or more, working all major muscle groups



<p>Material: Happy feet log, Borg Scale</p>	<p>Methods: Participatory lectures on the topic of hopping; applied lessons in the gym; home challenges and recording of personal data in the diary</p>	<p>Frequency: One lesson</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: Sciences: time and rhythm in nature and in humans; Music: binary and ternary rhythm. Strong and weak times. Rhythmic cadences. Art: the use of the hop in tribal and modern dances, folk and traditional dances based on the hop (e.g. the Tarantella or Pizzica)</p>
--	--	---	--------------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Hopping

Discussion about hopping with different modes and different rhythms, the pleasure of free dancing expression, the pleasure of moving while having fun, keeping fit without mental fatigue.

Learning point

- Learning how hop
- Hop is one of the movements included in dance with other types of movement such as jump, bounce, sidestep, squat, stomp, arm swings, twirls, and turns.
- In different cultural and ethnic groups, hopping is used inside typical dance for entertaining, reflecting on spirituality, telling stories, and for enjoyment.

Classroom activities

- Activities based on hopping and on the various types of rhythm that can be used - variable control of hopping (speed, number of repetitions, duration) - application of jumping to various situations (on the spot, on special paths, on relay games) - application of jumping to

sound support (musical bases) - detection of heart rate and recovery time (see LU 5); breathing control and relaxation between series of jumps.

- time and rhythm - physical characteristics - applications and tools
- density - intensity - quantity of rhythmic activities and elementary calculations related to them

Healthy homework + Challenges

1. During the week, practice, even at home, jumping jacks with dad or mom for at least 15 minutes a day.
2. Do medium intense types of jumping by varying speed, number of jumps or application time
3. Note in personal diary: How long can you hop? How much time?
4. With parents: write down in the diary the differences, between the three jumping modes, with reference to the detected heart rates (aspect already addressed in the LUs on walking and running)

Final Discussion after homework and challenges

Home challenges experiences

I was able to do hopping every day during my healthy homeworks? If no, why not?

References

Physical Activity ailable at <https://www.who.int/news-room/fact-sheets/detail/physical-activity>

Trending Topic | Physical Activity Guidelines. Available at <https://www.acsm.org/education-resources/trending-topics-resources/physical-activity-guidelines>

ATTACHMENTS: EXAMPLE OF A DIARY PAGE

NAME SURNAME	FEMALE	MALE	AGE	CLASS
QUESTIONS BEFORE THE ACTIVITIES				
How tiring is skipping in your opinion?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
Do you feel able to control various hopping rhythms?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
How long do you think you can hop without stopping?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
HOME CHALLENGES				
Week day	1 slow hopping	2 medium hopping	3 fast hopping	Borg corrispondence
Mon	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Tue	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Wed	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Thu	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Fri	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Sat	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
Sun	bpm____T(s)____	bpm____T(s)____	bpm____T(s)____	1: ; 2: ; 3:
QUESTION AFTER THE ACTIVITIES				
What awareness have you gained in controlling the tempo and rhythm applied to jumping?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
Do you feel more in your motor control?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
How long are you able to hop without stopping (mild resistant stimulus)?	Absolutely NOT	NOT	i don't know	YES Absolutely YES
How long are you able to hop at full speed (intense stimulus)?	Absolutely NOT	NOT	i don't know	YES Absolutely YE5
IMPRESSIONS AND FEELINGS ABOUT THE EXPERIENCE CARRIED OUT THREE WAYS OF HOPPING				
Describe (also with your parents):				

7° LU WEEK SEVEN: HOW CAN I USE MY BODY IN MOTION?

Goal:

Measuring spaces with your body in motion, experimenting and knowing the relationship between movement and learning

Key message:

Coordination and body awareness

Material: Sheets, pens or pencils, metric distance wheel, excel sheet to report data on the measures taken	Methods: Initial discussion, laboratory, healthy homework, cross-subject-teaching	Frequency: Two lessons	Timing: 60 minutes	Potential Curricular Links: Math: movement and learning can be linked to numbers (count during movement) space and time; Physical education: stimulate body control, balance, coordination, agility; Geography: find a common way to measure distances
--	---	----------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Learning point

- Lengths and measures; unit of measure; metric system; circumference and circle; time / distance calculation
- How can I move in space with different movements? (connection LU 7-8-9)

Classroom Activity

- Choose the space to be measured: corridor, atrium, gym; yard measurements. Every child measures the distance by counting the number of steps using different walking styles (normal step, long step or running).
- Discussion, how to establish a common measure (metric system) for home challenges; how does the metric wheel work?
- Measurement tests build one or more metric wheels.

References

World Health Organization (2020). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization. Available at <https://www.who.int/publications/i/item/9789240015128>.

U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.

Daily Steps and Health | Walking Your Way to Better Health. Available at <https://www.acsm.org/blog-detail/acsm-certified-blog/2019/06/14/walking-10000-steps-a-day-physical-activity-guidelines>

Healthy homework + Challenges

- walk 15 minutes a day for a week, recording the distance of the path x number of family participants. Share collected data. Nomination of the individual and collective winner (the more family members walk, the higher the distance traveled). (linked with LU-5)
- define a path of the same length, make the path with different steps as in the classroom activities. Calculate travel times. You must reach at least 10.000 steps in a day. (linked with LU 6-7)

Final Discussion after homework and challenges

How do I feel after the activity? What difficulties did I encounter? What body parts did I use? Has my heart rate increased?

8° LU WEEK EIGHT: SPORT

Goal:

Knowledge about common SPORT for children

Key message:

Social and cultural factor related to SPORT



<https://www.nhs.uk/healthier-families/activities/>

<p>Material: Happy feet log Daily journal for children and parents. Collect each sport experience, feeling.</p>	<p>Methods: Initial discussion, group activity, healthy homework</p>	<p>Frequency: One lesson</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: History: Identify how sport is influenced by culture and the environment, researched and recorded three facts about how a sport developed in another country</p>
--	---	---	--------------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about physical activity

Talking about what is sport? How much time does everyone spend in practicing the sport during the week? (Raise your hand) Which type of sport?

Learning points

- Teacher starts to explain the differences between organized sport (structured team sports, single sports)
- Sport has the potential to contribute both positively and negatively to wellbeing
- The effective promotion of sport ensures all children have the opportunity to: Participate to the highest level of their interest and ability, Experience enjoyment and achievement., Practice fair play in all situations, Experience and manage competition
- Competition: Team sports provide opportunities for children to develop teamwork and cooperation skills, manage success and disappointment, and to respect officials, teammates, and the opposition.

References

U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from [https://health.gov/sites/default/files/2019-09/Physical Activity Guidelines 2nd edition.pdf](https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf).

European cart of Sport. Available at: https://www.coni.it/images/documenti/Carta_europea_dello_Sport.pdf

- Culture: Children who experience sporting activities, in which cultural practices are expressed through movement, develop skills to identify and discuss the social and cultural significance that sport has for individuals and for society.

Classroom activities

- Let's choose one group sport activity and single sport activity and share it with the class.
- Create/understand how to fill the happy feet log day by day for two weeks regarding sport practiced

Healthy homework + Challenges

- Try to find a new sport you've never played. Learn the rules of the game and try it if you can and share with class in the following week
- Trying to do as much sport during extra school as you can. After two weeks teacher nominates the most active children

Final Discussion after homework and challenges

I was able to perform the PA new sport ? I know the new rules? I was not able. If no, why not?

9° LU WEEK NINE: WHAT IS A MOTOR TEST?

Goal:

Stimulate knowledge and body control to learn the self-evaluation of motor skills and stimulate proactive behaviours in favour of one's well-being

Key message:

Measure your motor skills and monitor their development over time

<p>Material:</p> <ul style="list-style-type: none"> ● Balance: “One leg”: Timer, bandage (to blindfold, optional), piece of wooden bar or tile; ● Flexibility: “bending”: gymnastic bench (small box), measuring rod / ruler in cm; ● Long jump: “muscle power”: adhesive tape to mark the distance on the ground - marks every 5 cm starting from 50 cm up to 3 metres; ● Side skips: “coordination”: timer, adhesive tape to mark the centre line on the ground; 	<p>Methods: Initial discussion about test, production of test material, healthy homework</p>	<p>Frequency: Two lessons</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: Science: muscular, skeletal, balance (ear); Geography: Mind maps, map work, urban geography - e. g. where are the best playgrounds and parks in the city; Art: school playground design, marking of available play opportunities</p>
---	---	--	--------------------------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about Motor test

Talking about what is a motor test? Do you know some motor tests?

Learning point

How important is it to be aware of our motor skills?

What am I able to do? How can I improve myself?

- Definition of motor skills
- Increase physical literacy, i.e. to develop an understanding of the components of fitness. (In developing this kind of physical awareness or core skills, this may then be transferred to a range of physical activities.)
- Develop an understanding that a person with adequate fitness is able to sustain physical activity or perform physical tasks efficiently without fatigue or injury
- The effective promotion of sport ensures all children have the opportunity to:
 - Participate to the highest level of their interest and ability.
 - Experience enjoyment and achievement.
 - Become competent and enthusiastic participants.

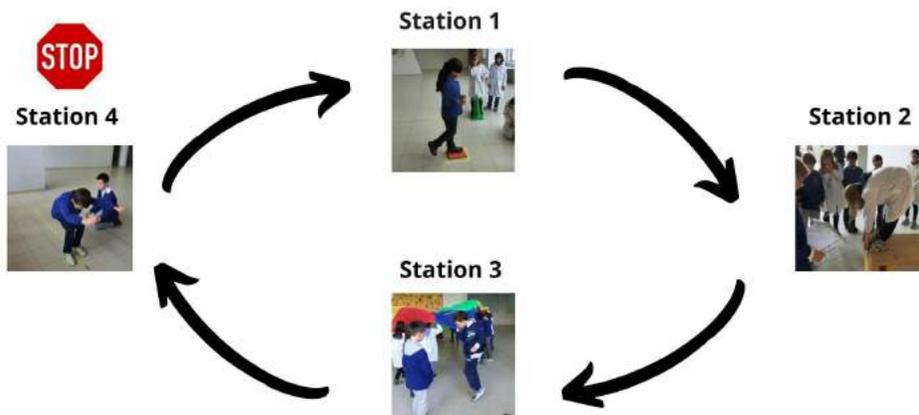
Classroom activities

- The activity requires the organisation of the space in a gym or other large rooms, divided into 4 stations, 1 for each test (see diagram).
- The class is divided into 4 groups; each group presents itself in front of the test station numbered from 1 to 4 (clockwise rotation); each pupil has a personal sheet containing his personal data and the matrix to record the results; they all start together in the same time; the results are recorded by the assistants assisted by the teachers; for each station there must be at least 2 pupils to record the data.
- Collection and processing of data and initial 'self-assessment' to be achieved at the end of the school year.

If the activity is extended to other classes, the children / students in the pilot class take the roles of co-conductors together with the teachers.

This activity can be used to register the initial and final situation of a class (extended over a school year). Its repetition is therefore proposed and useful for self-assessing the progress, generated by the increase in daily movement.

Placement for motor tests



Healthy homework + Challenges

- The activity can also be extended to families. The four motoric tests can be organised with the help of the pupils who have experienced them at school. In this way they can be self-organised by every family. Otherwise the school can organise a 'movement party'. Parents can measure their personal motor skills.
- As for the pupils, the adults can as well fix their individual motoric improvements (goals) over the time of a school year.
- Ultimate challenges: parent involvement in test performance

Final Discussion after homework and challenges

How do I feel after the activity? What difficulties did I encounter? What body parts did I use? Is it easy to balance?

References

- Mulato, R. Riegger, S.(editors): Movement Health Learning. In: Child in the city. Growing up in activated spaces. pp 74 - 89. Comenius Projekt 2012 - 2014
- Mulato, R. Riegger, S. (2014). Test motori. In: Maestra facciamo una pausa? pp 31-33, La Meridiana German motorik test. University Karlsruhe. Institute for sport science. Available at <https://www.sport.kit.edu/dmt/>
- Motorfit: monitoring of the state of physical and motor well-being of students from Lombardy. Available at: https://unikore.it/phocadownload/ScienzeTecnicheAttivitaMotorieSpecialistica/Dispense/Pignato/protocollo_motorfit_2008.pdf
- Ruiz, J. R., Castro-Piñero, J., España-Romero, V., Artero, E. G., Ortega, F. B., Cuenca, M. M., Jimenez-Pavón, D., Chillón, P., Girela-Rejón, M. J., Mora, J., Gutiérrez, A., Suni, J., Sjöström, M., & Castillo, M. J. (2011). Field-based fitness assessment in young people: the ALPHA health-related fitness test battery for children and adolescents. *British journal of sports medicine*, 45(6), 518–524. <https://doi.org/10.1136/bjism.2010.075341> (Available at <https://www.ugr.es/~cts262/ES/documents/ALPHA-FitnessTestManualforChildren-Adolescents.pdf>)
- Piercy, K. L., Troiano, R. P., Ballard, R. M., Carlson, S. A., Fulton, J. E., Galuska, D. A., George, S. M., & Olson, R. D. (2018). The Physical Activity Guidelines for Americans. *JAMA*, 320(19), 2020–2028. Available at <https://doi.org/10.1001/jama.2018.14854>
- U.S. Department of Health and Human Services (2018). *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.

10° LU WEEK TEN: HOW MOVEMENT IS RELATED TO SUSTAINABILITY?

Goal:

Know the relationship between individual and collective behaviors and handling with the environment



Key message:

Responsibility towards the environment caused by positive or negative personal choices and group responsibility when dealing with the environment.

<p>Material: Movement diary; online software for calculating ecological footprint; excel sheet to record collected data</p>	<p>Methods: Initial discussion, laboratory, healthy homework, cross subject teaching, internet research</p>	<p>Frequency: --</p>	<p>Timing: --</p>	<p>Potential Curricular Links: Science: the meaning of ecological approach; Civics: the importance of (individual) choices in respect of the environment; Mathematics: statistical about personal data; Geography: Data between different Country</p>
--	--	---------------------------------	------------------------------	--

LET'S START PLAYING FOR HEALTH

Learning point

- Do our habits cause effects on the environment? Can the effects caused by us on the environment be calculated?
- What is CO₂ used for? Does it exist in nature? What happens if it isn't there? What happens if there is too much? What causes the increase in CO₂? If I walk, how much do I consume? What if I run?

Classroom Activity

- Calculate our ecological footprint (EF) : graph of the individual EF and average of the EF value
- Diagnosis? How can we improve? Energy, food, transport: we plan small steps for a change: f.e. - Walk to school week

References

Global action plan on physical activity 2018–2030: more active people for a healthier world. Geneva: World Health Organization; 2018.
Licence: CC BY-NC-SA 3.0 IGO Available at: <https://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf>

- Walk of the class: 1 km on the schoolyard or near the school. How much CO₂ do we save?
- Walk to school week; measuring the distance from home (bus stop) to school. Learn the formula for the calculation KM (by car - CO₂ use)

Healthy homework+ Challenges

- Walkability group from home to school at least three times or more per week with family: calculate the km CO₂ saved in a week (comparison with teammates)

Final Discussion after homework and challenges

How do I feel after the activity? What difficulties did I encounter?

11° LU WEEK ELEVEN: HOW DO I USE MY SENSES IN PHYSICAL ACTIVITY?

Goal:

Explore the schoolyard using all the human senses; learn to observe space with one sense only (blind, deaf, touch, smell) and represent it.

Key message:

Body awareness, orientation

Material: Schoolyard map (A3 format with rigid cardboard backing), pens / pencils, camera or smartphone	Methods: Initial discussion, laboratory, healthy homework	Frequency: --	Timing: --	Potential Curricular Links: Geography: Maps creation; Math: spatial orientation, trajectories and geometric figures; Art: production of colleges and artifacts
---	---	-------------------------	----------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about physical activity

Talking about which are the senses? How many senses do we have?

Learning point

- Teacher starts to explain the five senses and describes them.
- What is the sense you use most during physical activity?
- Other senses besides the classic ones involved during physical activity for example the kinesthetic sense
- Do we learn to use them? Let's read the map of our schoolyard together.

Classroom activities

- The class can be divided into groups: one group for each sense to be activated. Each group has a map to enrich and define according to the sense they activate to analyze the pathway
- In the classroom, on a larger map, the results of sensory exploration are reported, documented, shared and discussed together. The class will thus build a "sensory-affective map" that will be able to give

References

Andrea Canevaro, Andrea Camerini, I explore my body and the environment. Games and activities for children aged two to seven, Erickson, 2013
Ilaria D'Aprile, Learning with joy. Outdoor education in schoolyards, La Meridiana, 2020

significant information on the ease or discomfort that the space offers and therefore guidelines for improving its use and organization.

Healthy homework + Challenges

- Children and families are invited to explore a place they frequent (garden or public park, condominium courtyard, naturalistic-environmental path, riverside); the activity can also be organized for groups of families, who will document their explorations by creating shared paper maps (digital maps with google maps)
- Once you have identified a space/path, mark a perimeter, calculate its length and accomplish one of the following challenges: How far can I run on the course before I feel tired? Can I do ten laps of the course? What senses do I feel are most engaged during the activity?

Final discussion

How do I feel after the activity? What difficulties did I encounter? What sense did I use? The human body, what are the senses for?

12° LU WEEK TWELVE: HOW TO LEARN BY DOING PHYSICAL

Goal:

Experience and knowledge of the relationship between physical activity and learning

Key message:

Learning by doing

Material: Different writing tools (Colored chalks, or circular stencils and various shapes to be placed on the ground)	Methods: Initial discussion, indoor/outdoor activity, and healthy homework	Frequency: --	Timing: --	Potential Curricular Links: Mathematics: learn how to do math's operation; Literatures: Memorize poetry with movement; Language: Learning the alphabet of a foreign language
--	--	-------------------------	----------------------	--

LET'S START PLAYING FOR HEALTH

Initial Discussion about physical activity

Talking about what learning by doing is?

Learning point

- Teacher starts to explain that it is possible to learn using physical activity and play/game
- Have you ever used a game to learn something new?
- There are so many ways you can learn including play and movement

Classroom Activity

Two methods of preparation: write the letters of the alphabet (or numbers from 1 to 10 repeated twice) on circular stencils or of various shapes (plywood or other materials that do not slip) so that they can be reused.

- Puddle of letters: "my name is" jump over the letters to "write" your name. (2) "Guess the word": the children take turns inventing a word. They "write/jump" it and the others have to guess the word.

References

Movement and Learning. The University of North Carolina at Chapel Hills. Available at:

<https://learningcenter.unc.edu/tips-and-tools/movement-and-learning/>

School in Movement Available at: <https://www.schulebewegt.ch>

Mulato R., Riegger S., Scarpe Blu. How to educate children to move around the city independently and safely, La Meridiana, 2013.

- Puddle of numbers: "Maths competitions" - the children perform the operations suggested by the leader (teacher or other child) by jumping on the numbers (example: $3 + 5 = 8$; $8 + 2 = 10$; $10 : 5 = 2$; $2 \times 9 = 18$). Whoever jumps counts aloud, the others check that the operations are correct.

Healthy homework+ Challenges

- Draw the puddle of letters and / or numbers on the ground in the backyard or in a protected place. Appoint a game leader who communicates the words to be composed. Children write the words by jumping. Parents take the time, record and count the words written within a set time frame.

Final discussion

How do I feel after the activity? What difficulties did I encounter? Is it fun learning by doing?

4

LEARNING UNITS ABOUT
HEALTHY SLEEP FOR
PRIMARY SCHOOL

1° LU WEEK ONE HOW MUCH SLEEP DO I NEED?

GOAL:

Knowledge about recommendations toward healthy sleep habits in children

Key message:



Source: Centers for Disease Control and Prevention (CDC)

<p>Material: “My secret sleep diary”</p>	<p>Methods: Initial discussion, content of guidelines on healthy sleep behavior sleep hygiene, group activity, healthy homework</p>	<p>Frequency: One lesson</p>	<p>Timing: 60 minutes</p>	<p>Potential Curricular Links: This learning unit is not specific for a particular school subject.</p>
---	--	---	--------------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy Sleep Habits

Start talking about how children feel in the morning: do they feel sleepy or spry? Talk about: What is Healthy Sleep? How many hours per night do they usually sleep? How many hours of sleep are enough for good health?

Learning points

- The teacher starts the lesson explaining the recommended number of hours of sleep for each age group (babies, children, adolescents, adults, animals).
- Explain how lack of sleep affects health: Research has found that insufficient sleep is linked to an increased risk for the development of type 2 diabetes. Laboratory research has found that short sleep duration results in metabolic changes that may be linked to obesity. Epidemiologic studies conducted in the community have also revealed an association between short sleep duration and excess body weight. This association has been reported in all age groups—but has been particularly pronounced in children. It is believed that sleep in childhood and adolescence is particularly important for brain development.
- Children 6 to 12 years of age should sleep 9 to 12 hours per 24 hours on a regular basis to promote optimal health.

- Talking about the importance of being consistent and going to bed at the same time each night and getting up at the same time each morning, including on the weekends.

Classroom activities

- Let's create your own secret sleep diary.
- Understand how to fill the sleep diary day by day for one week.

Healthy Homework + Challenges

- Try to sleep 9 to 12 hours per night including naps.
- Define a set bedtime to meet a minimum number of hours of sleep (9-12 hours).
- Record in the diary the time you went to bed and the time you woke up. Describe how you feel and describe in the diary how you feel during the day.

Final Discussion after homework and challenges

Was I able to sleep the recommended amount of hours? If not, why not?

References

Centers for Disease Control and Prevention (CDC) (Available at: www.cdc.gov/sleep/about_sleep/how_much_sleep.html);

Paruthi, S., Brooks, L. J., D'Ambrosio, C., Hall, W. A., Kotagal, S., Lloyd, R. M., Malow, B. A., Maski, K., Nichols, C., Quan, S. F., Rosen, C. L., Troester, M. M., & Wise, M. S. (2016). Recommended Amount of Sleep for Pediatric Populations: A Consensus Statement of the American Academy of Sleep Medicine. *Journal of clinical sleep medicine : JCSM : official publication of the American Academy of Sleep Medicine*, 12(6), 785–786. <https://doi.org/10.5664/jcsm.5866>

Knutson, K. L., Ryden, A. M., Mander, B. A., & Van Cauter, E. (2006). Role of sleep duration and quality in the risk and severity of type 2 diabetes mellitus. *Archives of internal medicine*, 166(16), 1768–1774. <https://doi.org/10.1001/archinte.166.16.1768>

Depner, C. M., Stothard, E. R., & Wright, K. P., Jr (2014). Metabolic consequences of sleep and circadian disorders. *Current diabetes reports*, 14(7), 507. <https://doi.org/10.1007/s11892-014-0507-z>

Li, L., Zhang, S., Huang, Y., & Chen, K. (2017). Sleep duration and obesity in children: A systematic review and meta-analysis of prospective cohort studies. *Journal of paediatrics and child health*, 53(4), 378–385. <https://doi.org/10.1111/jpc.13434>

Matricciani, L., Paquet, C., Galland, B., Short, M., & Olds, T. (2019). Children's sleep and health: A meta-review. *Sleep medicine reviews*, 46, 136–150. <https://doi.org/10.1016/j.smr.2019.04.011>

Dutil, C., & Chaput, J. P. (2017). Inadequate sleep as a contributor to type 2 diabetes in children and adolescents. *Nutrition & diabetes*, 7(5), e266. <https://doi.org/10.1038/nutd.2017.19>

2° LU WEEK TWO: TIPS FOR BETTER SLEEP

Goal:

Knowledge about recommendation toward healthy sleep habits in children

Key Message:

Follow the tips to improve your sleep quality in order to stay healthy!

Material: “My quality sleep diary”	Methods: Initial discussion, content of guidelines on sleep hygiene, group activity, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: This learning unit is not specific for a particular school subject.
--	---	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy Sleep Habits

Talking about the importance of good quality rest and sleep.

Learning points

- Explain how poor quality of sleep affects brain function and academic achievement.
- Explain sleep stages and their importance in allowing the brain and body to recuperate and develop. Failure to obtain enough of both deep sleep and REM sleep may explain some of the profound consequences of insufficient sleep on thinking, emotions, and physical health.
- Explain some habits that can improve sleep health:
 - Be consistent. Go to bed at the same time each night and get up at the same time each morning, including on the weekends.
 - Make sure your bedroom is quiet, dark, relaxing, and at a comfortable temperature (See also Learning Unit on Healthy Sleep n. 4)
 - Remove electronic devices, such as TVs, computers, and smartphones, from the bedroom (See also Learning Unit on Healthy Sleep n. 4 and Learning Unit on Physical Activity n. 4)
 - Avoid large meals, caffeine, and alcohol before bedtime (See also Learning Unit on Nutrition n. 13)
 - Avoid smoking tobacco.

–Get some exercise. Being physically active during the day can help you fall asleep more easily at night (See also the Learning Units on Physical Activity).

Classroom activities

- Let's create your own quality sleep diary: the diary should include sections to be filled in with your behavior, for example: which time you go to bed and what time you get up, how many times you wake up during the night and why, if you use electronic devices before sleeping, if the room is quiet, dark and comfortable, what you eat and drink during the day and if you exercise during the day etc.
- Understand how to fill the quality sleep diary day by day for one week.

Healthy homework + Challenges

- Track your sleep at home using a quality sleep diary: record in the diary how many times you woke up during the night (i.e. to use the bathroom) and how many minutes you need to fall asleep, which time you go to bed and what time you get up (Answer to the question "Are you consistent during the week?"), which are your habits after going to your bedroom, how many times you wake up during the night and why, if you use electronic devices before sleeping, if the room is quiet, dark and comfortable, what you eat and drink during the day (small or large meal at dinner, caffeinated items e.g. soda,

chocolate, tea etc.), if you exercise during the day and for how long and if you take a nap. Record how you feel (rested or tired) when you wake up for the day and your mood during the day (pleasant or unpleasant).

- After completing your diary, try to find out with your parent(s) which behaviors are healthy and which ones are unhealthy.

Final Discussion after homework and challenges

Do you think your behaviors are healthy or unhealthy? Do you agree or disagree with your parents?

References

Centers for Disease Control and Prevention (CDC) (Available at: <https://www.cdc.gov/sleep/index.html>; https://www.cdc.gov/sleep/about_sleep/sleep_hygiene.htm)

Division of Sleep Medicine at Harvard Medical School and WGBH Educational Foundation (Available at: <http://healthysleep.med.harvard.edu/healthy/matters/benefits-of-sleep/learning-memory>)

Maquet P. (2000). Sleep on it!. *Nature neuroscience*, 3(12), 1235–1236. <https://doi.org/10.1038/81750>

3° LU WEEK THREE: FEEL COMFORTABLE AND RELAXED

Goal:

Knowledge about recommendations toward sleep positions and relaxation techniques

Key Message:

Choose your ideal sleeping position and practice relaxation techniques when you go to bed

Material: Tatami or carpet	Methods: Initial discussion, group activity, practice training, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: This learning unit is not specific for a particular school subject.
--------------------------------------	---	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion

Start talking about sleep positions: what position do adolescents usually sleep in?

Learning points

- Focus on the importance of a comfortable sleep position in order to have a good rest and a healthy attitude for every part of your body (vertebral column, stomach, neck, circulation).
- The best sleep position is one that promotes healthy spinal alignment from your hips all the way to your head. Specifically, sleeping on the side or back is considered more beneficial than sleeping on the stomach. In either of these sleep positions, it's easier to keep your spine supported and balanced, which relieves pressure on the spinal tissues and enables your muscles to relax and recover.
- Explain how different sleep positions can provide different benefits that may be helpful for you in various health conditions, such as back pain, allergies, acid reflux, nasal congestion.
- Think about how a good resting position could help you fall asleep faster than usual and thus achieve the correct amount of sleeping hours (see also LU n.1 on Sleep: "How much sleep do I need?")

Classroom activities

- The teacher shows on a tatami or on a carpet:
 - Various sleeping positions:

The most comfortable sleeping positions



On the back:

Experts consider this to be the healthiest position for sleep as it helps to maintain proper spinal alignment.



On the side:

Most people sleep on their side, also known as the fetal position. However, your head should remain neutral with your spine and chin facing forward.



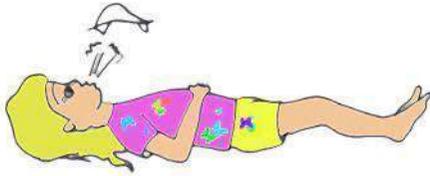
On the stomach:

This position is considered the worst sleeping position because your head has to lean to the side to breathe. This strains your neck and causes your spine to be misaligned.

- Tips to find comfortable positions:



- Elementary relaxation techniques (breathing control and muscles relaxation):



- Practice training: following the instructions of the teacher, try the different positions to fall asleep and the relaxation techniques.

References

Sleep Foundation (Available at: www.sleepfoundation.org)

Healthy homework + Challenges

- Every night, before bedtime, practice the relaxation techniques and use the suggested sleeping positions (remember that it is better not to sleep in the prone position). Try to mentally relax.
- Monitor the quality of your sleep (if you wake up at night and why, how rested you feel in the morning...). You can mark it in a daily diary.
- Try the suggested positions for 1 week and notice if the quality of your sleep improves.

Final Discussion after homework and challenges

Was I able to find a comfortable position in my bed and to relax before falling asleep? If not, why not?

4° LU WEEK FOUR: MY IDEAL BEDROOM

Goal:

Knowledge about the importance of a right sleep setting to promote a good rest

Key Message:

A proper setting is fundamental in order to improve your sleep quality and to help you to fall asleep

Material: Sketch book	Methods: Initial discussion, content of CDC guidelines, group activity, healthy homework	Frequency: One lesson	Timing: 60 minutes	Potential Curricular Links: This learning unit is not specific for a particular school subject.
---------------------------------	--	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy Sleep Habits

Start talking about the adequacy of the setting to improve the quality of sleep and to achieve a good rest.

Learning points

- Focus on the ideal bedroom: explain that the bedroom should be quiet, dark, relaxing, and at a comfortable temperature (18°-20°C);
- Focus on the different types of light color in your bedroom: blue light has the strongest impact on the quality of your sleep, because it influences the circadian rhythms. The exposure to blue light (and white light, which contains blue light) 1 or 2 hours before bedtime can make it difficult for you to fall asleep and stay asleep. On the contrary, red light has no effect on the circadian clock, so you can use a dim red light at night. Lastly, yellow and orange light have little effect on the clock.
- Focus on electronic device usage and their presence in the bedroom: explain why using electronic devices before going to bed negatively affects sleep quality: electronic devices emit strong blue light; when you use these devices, blue light floods your brain, tricking it into thinking it's daytime. As a result, your brain suppresses melatonin production and works to stay awake. You should take away all electronic devices from your bedroom.

Classroom activities

- Describe your dreaming bedroom: how do you imagine it, according to the directions you have just heard? Talk about it with your mates.
- Try to think about activities you could do before bedtime instead of using electronic devices (reading a book in a quiet environment, listening to relaxing sounds or music/somebody reading a story)
- There is a genetic link for the morningness or eveningness tendency: some people are naturally "early to bed and early to rise" and tend to have more difficulties working at night, so they are represented by a lark. On the other hand, people that are naturally "late to bed and late to rise", have fewer difficulties working at night and tend to have more troubles with early morning start times, so they are represented by an owl. Which of these animals represents you better? Discuss about it with your mates.

Healthy homework + Challenges

- Project your ideal bedroom;
- Organize your bedroom (take away everything that is not related to sleeping; reduce lighting: use room-darkening shades or heavy, lined draperies, or wear an eye mask during sleep; reduce noise: wear earplugs and turn off the phone; set the right temperature: 18°-20°C, if this won't work for you, the generally accepted temperature range for sleep is 15.6 to 19.4°C);
- Choose your favorite pajamas and use it only when sleeping; wear something else during the day and weekends;

- Use your bed only when sleeping;
- Remove electronic devices, such as TVs, computers and smartphones from the bedroom. Don't use electronic devices for 1-2 hours before bedtime; ✓
- You may enjoy your favorite scent with an aromatherapy diffuser

- Try to organize your bedroom following these directions for 1 week and notice if the quality of your sleep improves

Final Discussion after homework and challenges

Was I able to create a proper setting in order to fall asleep easily? If not, why not?

References

Centers for Disease Control and Prevention (CDC) - Sleep Hygiene Tips (available at: https://www.cdc.gov/sleep/about_sleep/sleep_hygiene.html)

Centers for Disease Control and Prevention (CDC) - Sleep and Sleep Disorders (available at: https://www.cdc.gov/sleep/about_sleep/index.html)

5° LU WEEK FIVE: MY SLEEP ROUTINE

Goal:

Knowledge about recommendation toward healthy sleep habits in children

Key Message:

A sleep routine can improve your sleep quality

Material: Bedtime routine list	Methods: Initial discussion, content of CDC guidelines, group activity, healthy homework	Frequency: One lesson	Timing: 90 minutes	Potential Curricular Links: This learning unit is not specific for a particular school subject.
--	--	---------------------------------	------------------------------	---

LET'S START PLAYING FOR HEALTH

Initial Discussion about Healthy Sleep Habits

- Feedback on what you learned until now: did the healthy homework improve your sleep quantity and quality? Talk about the importance of achieving a healthy sleep routine.

Learning points

- Focus on why a bedtime routine is important. A bedtime routine is a set of activities you perform in the same order, every night, in the 30 to 60 minutes before you go to bed. It can help you relax and set your mind for sleeping.

Classroom activities

- Pick one of your favorite cartoon/book characters and try to imagine what his/her/its typical day is like: what should be the correct bedtime routine, according to what you just learned?
- Create the perfect bedtime routine: you will have to follow it as your healthy homework. It should include these points:
 - Set a bedtime;
 - Choose your favorite pajamas;
 - If you feel anxious, you could take a warm bath;

- Brush your teeth before going to bed;
- Go to the toilet;
- Reduce bright lighting in your room;
- Read your favorite story/a chapter of a book.
- Do some stretching or breathing exercises (see also Learning Unit on Healthy Sleep n. 3).

You can also schedule a morning routine to begin the day, including, for instance:

- You can also schedule a morning routine to begin the day, including, for instance:
 - Open blinds first thing in the morning
 - Get up at the same time every day, even on weekends or during vacations.

Healthy homework + Challenges

- Follow your bedtime routine for a week and notice if the quality of your sleep improves

Final Discussion after homework and challenges

Was I able to create and consistently follow my sleep routine?
If not, why not?

References

Centers for Disease Control and Prevention (CDC) (available at: http://www.cdc.gov/sleep/about_sleep/sleep_hygiene.html)

American Academy of Sleep Medicine (available at: <http://www.aasm.org/>)

REFERENCES

1. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J. P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., Lambert, E., ... Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British journal of sports medicine*, 54(24), 1451–1462. <https://doi.org/10.1136/bjsports-2020-102955>
2. Matricciani, L., Paquet, C., Galland, B., Short, M., & Olds, T. (2019). Children's sleep and health: A meta-review. *Sleep medicine reviews*, 46, 136–150. <https://doi.org/10.1016/j.smrv.2019.04.011>
3. World Health Organization (2018a). Food and nutrition. Available at: http://www.euro.who.int/data/assets/pdf_file/0006/257919/Fact-sheet-2014-Food-and-Nutrition-Eng.pdf ua=1
4. Haines, J., Haycraft, E., Lytle, L., Nicklaus, S., Kok, F. J., Merdji, M., Fisberg, M., Moreno, L. A., Goulet, O., & Hughes, S. O. (2019). Nurturing Children's Healthy Eating: Position statement. *Appetite*, 137, 124–133. <https://doi.org/10.1016/j.appet.2019.02.007>
5. Janssen, I., & Leblanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *The international journal of behavioral nutrition and physical activity*, 7, 40. <https://doi.org/10.1186/1479-5868-7-40>
6. Ness, A. R., Leary, S. D., Mattocks, C., Blair, S. N., Reilly, J. J., Wells, J., Ingle, S., Tilling, K., Smith, G. D., & Riddoch, C. (2007). Objectively measured physical activity and fat mass in a large cohort of children. *PLoS medicine*, 4(3), e97. <https://doi.org/10.1371/journal.pmed.0040097>
7. Ekelund, U., Luan, J., Sherar, L. B., Esliger, D. W., Griew, P., Cooper, A., & International Children's Accelerometry Database (ICAD) Collaborators (2012). Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents. *JAMA*, 307(7), 704–712. <https://doi.org/10.1001/jama.2012.156>
8. Dobbins, M., Husson, H., DeCorby, K., & LaRocca, R. L. (2013). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *The Cochrane database of systematic reviews*, 2013(2), CD007651. <https://doi.org/10.1002/14651858.CD007651.pub2>
9. Aubert, S., Brazo-Sayavera, J., González, S. A., Janssen, I., Manyanga, T., Oyeyemi, A. L., Picard, P., Sherar, L. B., Turner, E., & Tremblay, M. S. (2021). Global prevalence of physical activity for children and adolescents; inconsistencies, research gaps, and recommendations: a narrative review. *The international journal of behavioral nutrition and physical activity*, 18(1), 81. <https://doi.org/10.1186/s12966-021-01155-2>
10. Lewien, C., Genuneit, J., Meigen, C., Kiess, W., & Poulain, T. (2021). Sleep-related difficulties in healthy children and adolescents. *BMC pediatrics*, 21(1), 82. <https://doi.org/10.1186/s12887-021-02529-y>
11. Leme, A., Hou, S., Fisberg, R. M., Fisberg, M., & Haines, J. (2021). Adherence to Food-Based Dietary Guidelines: A Systemic Review of High-Income and Low- and Middle-Income Countries. *Nutrients*, 13(3), 1038. <https://doi.org/10.3390/nu13031038>
12. Story, M., Nannery, M. S., & Schwartz, M. B. (2009). Schools and obesity prevention: creating school environments and policies to promote healthy eating and physical activity. *The Milbank quarterly*, 87(1), 71–100. <https://doi.org/10.1111/j.1468-0009.2009.00548.x>
13. Wang, Y., Cai, L., Wu, Y., Wilson, R. F., Weston, C., Fawole, O., Bleich, S. N., Cheskin, L. J., Showell, N. N., Lau, B. D., Chiu, D. T., Zhang, A., & Segal, J. (2015). What childhood obesity prevention programmes work? A systematic review and meta-analysis. *Obesity reviews : an official journal of the International Association for the Study of Obesity*, 16(7), 547–565. <https://doi.org/10.1111/obr.12277>
14. Dobbins, M., Husson, H., DeCorby, K., & LaRocca, R. L. (2013). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *The Cochrane database of systematic reviews*, 2013(2), CD007651. <https://doi.org/10.1002/14651858.CD007651.pub2>
15. Centers for Disease Control and Prevention (CDC). Comprehensive school physical activity programs: a guide for school. Atlanta, GA: US Department of Health and Human Services, 2013