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TEACHING SCENARIO FOR IMPLEMENTATION OF THE INTERDISCIPLINARY PROJECT FOR STUDENTS

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| Project Name: | I know what I am eating |
| Related Subjects | biology, chemistry, mathematics, geography |
| Key Concepts | nutrients, vitamins, food pyramid, food additives, food labelling, calories, world food production |

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| Activity Name: | Health on a plate – An introduction |
| Duration of the activity (min): | 10 min |
| Detailed description of the activity: | |
| <p>Before class, create a class profile in ClassDojo, entering each student profile and category of points. You will use this app throughout the project. You can assign credits to students for specific activities and put in specific tasks to solve.</p> <p>Please welcome students, provide a theme, and explain the purpose of the lesson—after class, students will be able to identify and characterize the nutrients found in certain food.</p> <p>Together with the students, define the term "nutrients" (snowball method). Divide students into pairs (use ClassDojo for this), give each pair of students one paper and felt-tip pen and ask them to write on paper what they think are nutrients. Then connect the pairs into groups of four students so that together they can analyse both definitions, add something new to them, or transform them.</p> <p>Each group should select one paper (from the two they have) and consider the selected definition. Merge two groups of four students into groups of eight students and assign them the same task. At the end of the activity, each group (out of eight students) makes its own definition of nutrients. If necessary, you can assist with their definitions.</p> | |
| Adapted activities for students with disabilities | |
| <p>In the activity of defining the term "nutrients", make sure that students with disabilities understand the instructions for the assignment and paraphrase the instructions with their own words if necessary.</p> | |
| Adapted activities for gifted students and those who want to know more | |
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| Activity Name: | Health on a plate – nutrients |
| Duration of Activity (min) | 20 min |
| Detailed description of the activity: | |
| <p>Use ClassDojo to divide students into 4-5 groups. Each group should have small cards of different colours (one colour for each group). Ask students to think about what they ate yesterday and write down each thing on one small card. Explain to students that it is necessary to accurately describe each product, such as exactly what kind of bread they ate.</p> <p>Point out that some dishes can contain many ingredients and should list as many as possible.</p> | |



Meanwhile, divide the board into 5 horizontal parts corresponding to the different types of nutrients in the food pyramid.

After the students have finished writing, ask each of them to paste their cards to the appropriate location on the board. You can use ClassDojo to determine the order in which students will paste the cards on the board. Cards can be attached with a magnet, using duct tape or adhesive paper.

After all the students have pasted their cards, show them the pyramid of food (as an example, you can use the image from the link <https://pl.pinterest.com/pin/6614730691474522/>). Encourage students to comment by asking questions, such as asking questions, for example:

1. Do you think the class eats healthy?
2. Which group feeds on the healthiest?
3. What do you think of the presented pyramid of food? Is it easy to follow the recommendations?

Then briefly talk about different types of nutrients and explain their role in the body.

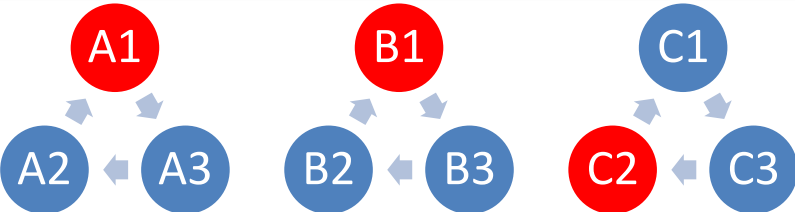
Using Wizer.me, check students' knowledge of nutrients. Share the worksheet from the link <https://app.wizer.me/learn/55IWSD> with students and instruct them to start solving the worksheet on their own.

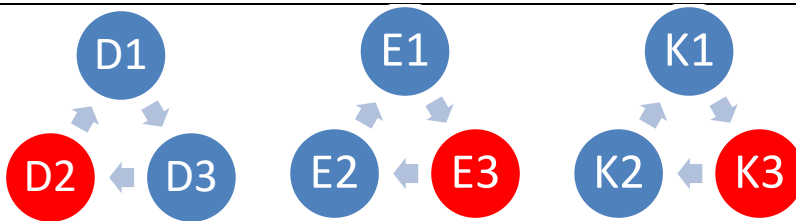
Adapted activities for students with disabilities

Make sure that students with disabilities understand about all the new concepts. Move around the class to monitor the progress of these students.

Customized activities for gifted students and those who want to know more

You can prepare a worksheet with additional tasks.

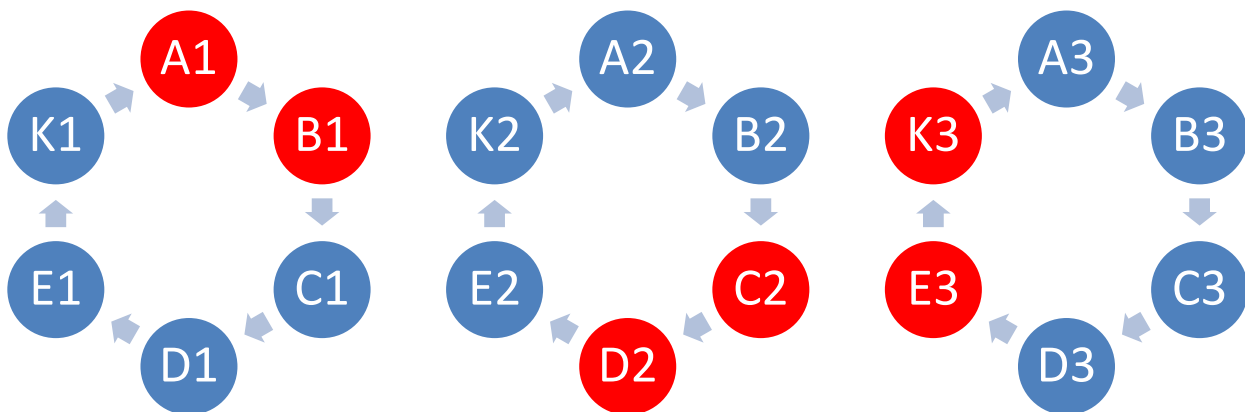
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| Activity Name: | Health on a plate – vitamins |
| Duration of Activity (min) | 25 min |
| Detailed description of the activity: | |
| <p><i>Phase 1 – Introduction to vitamins</i></p> <p>Divide the students into 6 groups (for this you can use ClassDojo) and tell them that the groups represent vitamins that are very important for the body. Each group is called the Expert Team and their task is to remember as much information as possible about the allocated vitamin. Teams should consist of at least 3 persons (Scheme 1). Share pre-prepared materials with a description of vitamins to students. The task of the student is to remember as much information about their vitamin as possible. Each group should appoint a specialist. The groups have five minutes to complete this task.</p> | |
|  <p>The diagram illustrates three groups of students, each with a specialist and two other members. Group A has specialist A1 (red circle) and members A2 and A3 (blue circles). Group B has specialist B1 (red circle) and members B2 and B3 (blue circles). Group C has specialist C1 (blue circle) and members C2 and C3 (blue circles). Arrows point from each specialist to their respective members, indicating a flow of information or expertise.</p> | |



Scheme 1. Dividing students by groups, experts are marked in red.

Phase 2. Vitamin Briefing

After the set time, the students regroup to form groups of all vitamins (Scheme 2).



Scheme 2. Dividing students by groups, experts are marked in red.

Group 1 includes experts in vitamins A and B, who give the others information about these vitamins.

Group 2 includes specialists in vitamins C and D, who give the others information about these vitamins.

Group 3 includes experts in vitamins E and K, who give the others information about these vitamins.

If more than one student participates in the activity, you can divide the tasks differently or you can divide vitamin B into specific types. Experts can use the materials you have prepared about vitamins as a reminder, but they should not read them during the presentation to other students in the group. Other students in the group can ask questions of experts, and experts give clarifications.

Phase 3 – Transfer of knowledge

Upon completion of the activity, all students return to their original groups (3 students each) and transfer the acquired knowledge to their teammates. Thus, each student transmits to the other students in the group information about the vitamins he met (e.g. student A2 transmits to students A1 and A3 information about vitamins C and D).

Phase 4 – Knowledge Checker

After the students have completed the task, check the student's knowledge with the help of a previously prepared test in Quizizz. Run the quiz at the following link: <https://quizizz.com/admin/quiz/626fdcfcb48c3d001d8a0898>

Students run a quiz on their devices by typing code on www.joinmyquiz.com or by opening the links you will send them. In doing so, the students remain in the same groups and the whole group solves Quizizz together. You can reward the best group with ratings.

Add homework to students: Let them bring 3-4 labels or food packages for the next lesson.



Adapted activities for students with disabilities

Make sure that the students with disabilities are the experts in the group. Make it easier for these students to work by allowing them to take notes during a vitamin briefing, so that it is easier for them to transfer information to their group correctly later.

In order to consolidate their knowledge, you can give them homework: look at the packaging of the food you have in the house for certain groups of nutrients.

Adapted activities for gifted students and those who want to know more

Make them an expert in the vitamin briefings.

You can also give them their homework to look for information about certain dietary minerals and the role they play in the human body.

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| Activity Name: | List E and more on the label – An introduction |
| Duration of Activity (min) | 2 min |
| Detailed description of the activity: | |
| <p>Greet students, list the topic, and explain the purpose of the lessons — after class, students will be able to read labels on their own and understand what food additives are.</p> <p>Ask students what food additives are and try to define this term together with them. At this stage, do not yet mention their types or what they are for.</p> | |
| Adapted activities for students with disabilities | |
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| Adapted activities for gifted students and those who want to know more | |
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| Activity Name: | List E and more on the label – research |
| Duration of Activity (min) | 10 min |
| Detailed description of the activity: | |
| <p>Divide the students into pairs and ask them to choose one pack of products or one label from the food they brought. Then ask them to try to provide all the information this label/packaging contains, e.g. product type, shelf life, etc. Tell them it's called a product declaration.</p> <p>When they're done, give students a checklist (see example below) and ask them to check that the product declaration contains all the information that should be there.</p> | |
| The Declaration in the Republic of Croatia must contain: | |
| <input type="checkbox"/> product name <input type="checkbox"/> ingredients list <input type="checkbox"/> quantity or category of specific ingredients | |



- net product quantity
- Expiration Date
- storage and use conditions (if necessary)
- manufacturer information
- information on the distributor and/or importer placing the product on the market
- country of origin
- instructions for use (if necessary)
- actual percentage of the strength of alcohol by volume when it comes to alcoholic beverages or alcohol-containing products

Adapted activities for students with disabilities

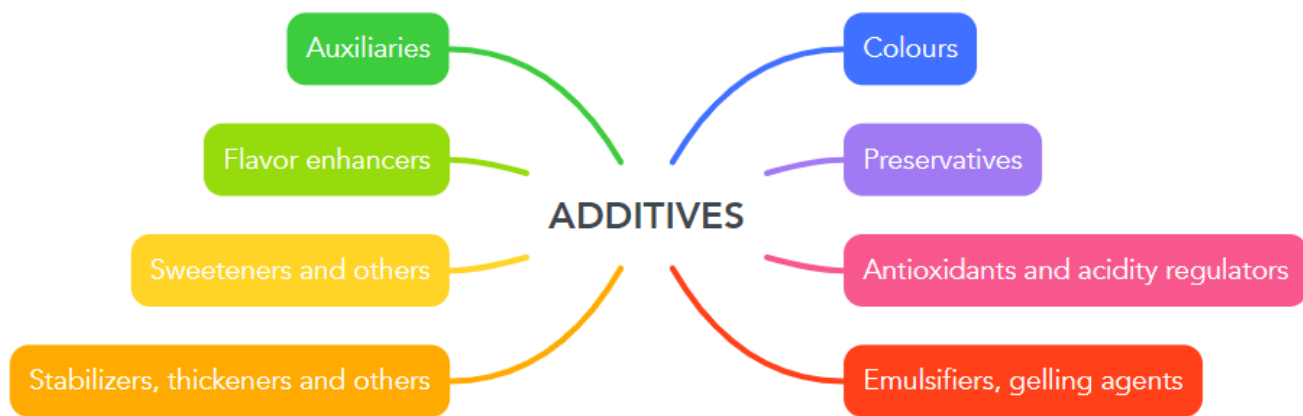
Students with special needs can have an easier task and get a ready-made list with places to enter certain data from the product declaration.

Adapted activities for gifted students and those who want to know more

For gifted students, you can prepare product labels in a foreign language.

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| Activity Name: | List E and more on the label – what is really healthy |
| Duration of Activity (min) | 10 min |
| Detailed description of the activity: | |
| <p>Using ClassDojo, divide students into 5 groups. Give each group product labels for analysis in terms of composition.</p> <p>Group 1 – milk 0.5% milk fat, milk 3.2% milk fat, chocolate milk</p> <p>Group 2 – grain bars, chocolate wafers, colourful candies</p> <p>Group 3 – lemon pepper, natural plant mixture, mixed seasons</p> <p>Group 4 – yogurt 0%, natural and fruit yogurt – sweetened</p> <p>Group 5 – water, flavoured water and fruit juice</p> <p>Ask the students if there was something in the analysis that surprised them and what it was.</p> <p>Ask students if product declarations contain substances they do not know and explain that they are food additives, often marked with the letter E.</p> | |
| Adapted activities for students with disabilities | |
| You can indicate or suggest to students which ingredients to analyse. | |
| Adapted activities for gifted students and those who want to know more | |
| You can ask students to try to find out what causes, for example, a large amount of sugar in fruit yogurt, etc. with the help of the Internet. | |



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| Activity Name: | List E and more on the label – types |
| Duration of Activity (min): | 15 min |
| Detailed description of the activity: | |
| <p>Ask students to stay in the same groups they were in before. Distribute tablets to students or ask them to sit in front of the computer. Then tell them that you have sent an invitation to collaborate in the Mind Master map that you previously prepared. Explain that the folder displays food additives and specify the types of additives. Then ask the students to write all the food additives from their product packaging (all packages in the group) and type them into the mind map you have prepared. The student's task is to figure out which additive belongs to a particular group, e.g. E120 belongs to the colours group, E230 preservatives, E414 emulsifiers, gelling agents, etc. Additives can be repeated! Instruct students that they can use the Internet to solve this task.</p> <p><i>Example of Mind Master</i></p>  <pre> graph TD A[ADDITIVES] --- B[Auxiliaries] A --- C[Flavor enhancers] A --- D[Sweeteners and others] A --- E[Stabilizers, thickeners and others] A --- F[Colours] A --- G[Preservatives] A --- H[Antioxidants and acidity regulators] A --- I[Emulsifiers, gelling agents] </pre> <p>After completing the exercise, together with the students, make a brief assessment of these additives and ask the groups to indicate which type of product contains the most additives.</p> <p>Then show the students a list of prohibited additives (for example, for the Republic of Croatia: https://narodne-novine.nn.hr/clanci/sluzbeni/2010_05_62_1981.htm) and ask them if any of the products contain a prohibited food additive.</p> | |
| Adapted activities for students with disabilities | |
| <p>You can prepare a printed list with types of food supplements to make it easier for students with disabilities to not have to explore independently using the Internet.</p> <p>Also, students can focus only on typing add-ons into the mind folder.</p> | |
| Adapted activities for gifted students and those who want to know more | |
| <p>Offer students as an additional activity to divide food additives into organic and inorganic.</p> | |



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| Activity Name: | List E and more on the label – A debate |
| Duration of Activity (min) | 18 min |
| Detailed description of the activity: | |
| <p>Using ClassDojo, divide the class into two groups and introduce the topic of debate: food additives. Group A is in, Group B is against it. Give groups a few minutes to piece together the pros and cons, then start the discussion. Remember that you are the moderator. Make it clear to students that they can use all available resources.</p> <p>Summarize the debate and the whole lesson.</p> <p>Homework for volunteers Follow the labels – your task is to look at the labels of food products that you have in the house to see which food additives are the most common in order to investigate what reactions of the body that additives can cause. Then listen to your body by monitoring these reactions.</p> | |
| Adapted activities for students with disabilities | |
| <p>Have students take notes to help them prepare for discussion. Write each argument and counterargument on the board so that students can understand what they have already discussed and what has not yet been discussed.</p> | |
| Adapted activities for gifted students and those who want to know more | |
| <p>Let students speak freely during the debate. Suggest they can chair the group.</p> | |

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| Activity Name: | How much energy is in calories – an introduction |
| Duration of Activity (min) | 5 min |
| Detailed description of the activity: | |
| <p>Greet the students, list the topic, and explain the purpose of the lesson — after the lesson, students will be able to compose their own menu.</p> <p>Show students a short video https://www.youtube.com/watch?v=A7mMyv3mCJc ending in the second minute. Set captions to make it easier for students to understand content (Settings – Subtitles – Automatic Translation). After watching the video, ask the students what a calorie is. If necessary, instruct the students to the correct answer. Next, ask why the amount of calories a person consumes is important and what the amount of calories a person needs to consume depends on.</p> <p>Talk about the caloric needs of students who are their age.</p> | |
| Adapted activities for students with disabilities | |
| Adapted activities for gifted students and those who want to know more | |



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| Activity Name: | How much energy is in calories- counting calories |
| Duration of Activity (min) | 25 min |
| Detailed description of the activity: | |
| <p>Use ClassDojo to divide students into pairs and give each couple a calorie table using the https://www.health.harvard.edu/diet-and-weight-loss/calories-burned-in-30-minutes-for-people-of-three-different-weights website. Also, you can try to find this table on the Internet in the appropriate language or print out a table, if the students do not have access to computers. Then use the Wizer.me https://app.wizer.me/learn/D729OX to assign assignments to students and indicate the time to resolve the worksheet.</p> | |
| Adapted activities for students with disabilities | |
| <p>Try to avoid the situation where two students with learning disabilities work in pairs. While working, make sure students understand the task and how they are doing.</p> | |
| Adapted activities for gifted students and those who want to know more | |
| <p>Have students present the results of their groups.</p> | |

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| Activity Name: | How much energy is in the calories? – food |
| Duration of Activity (min) | 15 min |
| Detailed description of the activity: | |
| <p>Explain to students that everything we eat has a certain amount of calories. Show students a table of calories.</p> | |
| Soups (400g): Chicken with noodles From tomatoes Goulash | 227 kcal 148 kcal 204 kcal |
| Meat (200g) Chicken breast, fried Grilled chicken breast Beef roll Burger Turkey cutlets Roasted trout Fried file Alaskan haddock Grilled salmon | 536 kcal 246 kcal 265 kcal 249 kcal 316 kcal 295 kcal 380 kcal 548 kcal |
| Side dishes (120g): Boiled potatoes Baked potatoes Mashed potatoes Rice | 92 kcal 140 kcal 108 kcal 133 kcal |



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| French fries | 270 kcal |
| Gnocchi | 160 kcal |
| Ketchup (5 g) | 5 kcal |
| Mayonnaise (5 g) | 36 kcal |
| Mustard (5 g) | 8 kcal |
| Salad (150g) | |
| Sauerkraut | 37 kcal |
| Coleslaw salad | 101 kcal |
| Lettuce with souse | 95 kcal |

Separate the students into 4 groups and assign each of them a task.

Group 1

Assemble a diet meal from soup and main course with a caloric value of 600 kcal.

Group 2

Present a meal of soup and main course with a calorie value of 750 kcal.

Group 3

Present a meal for a physical worker from soup and main course with a caloric value of 880 kcal.

Group 4

Present a meal for the elderly person from the soup and main course with a caloric value of 510 kcal.

Ask individual groups to present their meals.

Assign students homework:

Put together your menu for the whole day. Don't forget the number of calories you need and the caloric value of each meal. Look online for information about the calories of your favourite dishes.

Present your menu with the help of genial.ly.

Adapted activities for students with disabilities

Make sure the students understand the task. If they have questions, give them additional instructions.

Adapted activities for gifted students and those who want to know more

Have these students present the results of their group. If anyone wants extra homework, set them up to come up with a menu for the whole week.



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| Activity Name: | Tastes of the world – an introduction |
| Duration of Activity (min) | 3 min |
| Detailed description of the activity: | |
| <p>Greet the students, list the topic, and explain the purpose of the lesson— after the lesson, they will know where certain foods come from, and find out which foods are typical of certain parts of the world.</p> <p>Start a short conversation about which part of the world produces the most food, which country is the largest food producer, whether enough food is produced for all the world population, etc.</p> | |
| Adapted activities for students with disabilities | |
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| Adapted activities for gifted students and those who want to know more | |
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| Activity Name: | Tastes of the world – where fruits and vegetables come from |
| Duration of Activity (min) | 10 min |
| Detailed description of the activity: | |
| <p>Ask students to sign in to tablets or computers and enter the worksheet address on the Wizer.me: https://app.wizer.me/learn/7UFTW/</p> <p>Their task is to guess where the fruits and vegetables that we often eat come from. The students enter the names of vegetables and fruits in the designated places in the worksheet, and then send their answers to the teacher. You can also perform this exercise using a common wall map.</p> | |
| Adapted activities for students with disabilities | |
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| Adapted activities for gifted students and those who want to know more | |
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| Activity Name: | Tastes of the world – the largest food producers in the world |
| Duration of Activity (min) | 20 min |
| Detailed description of the activity: | |
| <p>Divide students into groups of 3-4 people using ClassDojo. Give each group a list of food products, share genial.ly https://view.genial.ly/6270d8ef8c0707001a723da5/interactive-content-world-map with them, and refer each group of students to the task.</p> <p>Assign to students food products and ask them to put a picture of a particular food on the country on a map that they believe is the largest producer of that food. For example, find a picture of coffee in your resources, and then place ask the student to place that picture on the country on the map that they think produces the most coffee. Indicate to students that for this to use the internet. When the students complete the task, comment a little on their choice and see if they have handled it correctly.</p> | |



Brazil – coffee
Ivory Coast – Cocoa
USA – corn
China – wheat
India – poultry
Belgium – chocolate
Italy – wine
Ukraine – sunflower
Spain – olives
Costa Rica – pineapple
Philippines – coconut
Russia – barley
Egypt – dates
Norway – salmon
Canada – lentils
Madagascar – vanilla
Turkey – figs
Mexico – avocado

After the students have completed the task, give the students the correct answers and start a short story about the production of food in the world. Ask students to pay attention to the fact that hunger and malnutrition reign in the world and ask what factors affect this (climate change, competition for access to land: biofuels and feed, lack of means for food production, armed conflicts, food waste).

It is worth noting that all people have the same needs – to eat so that they can develop healthy. Food differs around the world, but contains the same substances: proteins, carbohydrates, fats, vitamins and mineral salts. Food is grown everywhere in the world.

Adapted activities for students with disabilities

Please ensure that there is only one student with disabilities in each group.

Adapted activities for gifted students and those who want to know more

You can ask students for information on how to fish for different types of fish, and also to mark climatic zones on the map.

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| Activity Name: | Tastes of the world – what children eat in the world |
| Duration of Activity (min) | 12 min |
| Detailed description of the activity: | |
| <p>Students perform this task in pre-organized groups. Ask one of the group members to sign up for the https://earth.google.com/web/ and create a new project. Students should choose Projects, then New project, create project in Google Drive, and then type the name of the project "Culinary Journey". Explain to the students that the task will be to identify as closely as possible the place in the world where the child from the picture lives, which will be shown using a projector. You can find pictures on the https://time.com/what-kids-eat-around-the-</p> | |

[world-in-one-week/](#) page. Students have one minute to recognize and mark the place by clicking on the map and selecting the "Add to project" option. View the first picture and mark together with your students on Google Earth where the child shown lives. Continue with following photos in the same way.

Example of project



After completing the exercise, comment with your students on the task and check the correct answers by showing the whole journey using the projector. Pay attention to the variety of nutrition options in the world. Ask students what diet they would most like to choose.

Briefly draw conclusions.

Adapted activities for students with disabilities

You can provide them with the names of the countries used in the exercise.

Adapted activities for gifted students and those who want to know more

Students try to specify what the diet of the child shown in the photo consists of during the commentary phase of the task.