





NUTRITION



Ins Manuel Blancafort Laia Cortès and Àlvar Garcia

Generació Plurilingüe (GEP) Year 2 2019-2020

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Identification of the GEP project

| Title | Nutrition |
|-------------------------------|--|
| Authorship | Laia Cortès, Àlvar Garcia (with the help of Neus Ruiz, Eva Mayol and Marta Martínez) |
| School | Ins Manuel Blancafort |
| Students' CEFR Level (A1, A2) | |
| Grade | 3rd ESO |
| Content area(s) | Ciències Experimentals |
| Number of sessions | 6 |
| Teacher(s) involved | Laia Cortès, Àlvar Garcia, Eva Mayol, Neus Ruiz, Marta Martínez, Laura Cubero |
| Keywords | Nutrition, Environment, Healthy diet, IMC, Carbon footprint |

1. OUR PROJECT

Introduction: What's the impact of our diet on our health and the environment? The aim of this project is to make students aware of the importance of





their nutrition habits for their own health and for the environmental balance of the planet. After some introductory activities students will work in small groups in which they will have to carry out research based on some experiments and finally they will have to present their results in a congress through an oral presentation and a summary poster.

Driving question: How does our diet affect our health or the environment?

Final product:

- 1. Congress of experts who present: poster on different issues
- 2. <u>Oral presentation</u> about their research in front of an audience of classmates, families and real experts.

| 2. GOALS | 2. HOW DO YOU KNOW STUDENTS ARE MAKING PROGRESS? (assessment criteria) |
|--|--|
| Distinguish between food and nutrients. | They can relate different instances of food. |
| Apply a balanced diet according to different needs or situations. | They can design a balanced diet based on different calculations (IMC, BMR, carbon footprint). |
| Calculate nutritional parameters based on different key concepts (IMC, BMR, carbon footprint) | They can calculate nutritional parameters and display their results in corresponding graphs. |
| Acquire healthy nutritional and consumption habits. | They can assess a diet in terms of healthy parameters. |
| Be aware of the environmental impact of our diets and develop a critical opinion about this issue. | They can express a critical opinion about the impact of our diets on the environment in the conclusions of their research. |
| Apply the scientific method in a little research. | They can carry out a little research applying the scientific method. |
| Create a digital poster to present their research. | They can present the results of their research in a digital poster. |
| Write a scientific report following the standard criteria for this kind of document. | They can report their research in a scientific text which follows the standard criteria. |





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| Present orally the results of their research. | They can explain orally the results of their research. | | |
|--|--|--|--|
| Organize and manage an event (the scientific congress) | They can organize and manage a scientific congress. | | |

| 3. CURRICULUM CONNECTIONS | | | | | | | |
|---|--|--|--|--|--|--|--|
| SPECIFIC COMPETENCES AND KEY CONTENTS | | | | | | | |
| Subject-matte | er curriculum | Foreign langua | ge curriculum | | | | |
| Specific Competences | Key Contents | Specific Competences | Key Contents | | | | |
| DIMENSIÓ INDAGACIÓ DE FENÒMENS | DIMENSIÓ INDAGACIÓ DE FENÒMENS | DIMENSIÓ COMUNICACIÓ ORAL | DIMENSIÓ COMUNICACIÓ ORAL | | | | |
| NATURALS I DE LA VIDA QUOTIDIANA | NATURALS I DE LA VIDA QUOTIDIANA | C1. Obtenir informació i interpretar textos | CC1. Comprensió oral: global, literal i | | | | |
| C4. Identificar i resoldre problemes científics | CC8. Model estructura de les subs- | orals dels mitjans de comunicació i de l'àmbit | interpretativa. | | | | |
| susceptibles de ser investigats en l'àmbit | tàncies. | acadèmic. | CC2. Estratègies de comprensió oral. | | | | |
| escolar, que impliquin el disseny, la realització | CC15. Fases d'una investigació. Disseny d'un | C2. Planificar i produir textos orals de | CC3. Estratègies de producció oral. | | | | |
| i la comunicació d'investigacions | procediment experimental. | tipologia diversa adequats a la situació | CC4. Estratègies d'interacció oral. | | | | |
| experimentals | CC16. Teories i fets experimentals. | comunicativa. | | | | | |
| C5. Resoldre problemes de la vida quotidiana | | C3. Emprar estratègies d'interacció oral per | | | | | |
| aplicant el raonament científic. | | iniciar, mantenir i acabar el discurs. | | | | | |
| | | DIMENSIÓ COMPRENSIÓ LECTORA | DIMENSIÓ COMPRENSIÓ LECTORA | | | | |
| C6. Reconèixer i aplicar els processos implicats | | C4. Aplicar estratègies de comprensió per | CC7. Comprensió escrita: global, literal, | | | | |
| en l'elaboració i validació | | obtenir informació i interpretar el contingut | interpretativa i valorativa. | | | | |
| del coneixement científic. | | de textos escrits d'estructura clara de l'àmbit | CC8. Estratègies de comprensió escrita. | | | | |
| | DIMENSIÓ SALUT | acadèmic. | | | | | |
| DIMENSIÓ SALUT | CC29. Funció de nutrició. Aliments i | C6. Seleccionar i utilitzar eines de consulta | | | | | |
| C14. Adoptar hàbits d'alimentació variada i | nutrients. | per accedir a la comprensió de textos i per | | | | | |
| equilibrada que promoguin la salut | Malalties i trastorns associats. | adquirir coneixement. | | | | | |
| i evitin conductes de risc, trastorns alimentaris | | | | | | | |
| i malalties associades. | | DIMENSIÓ EXPRESSIÓ ESCRITA | DIMENSIÓ EXPRESSIÓ ESCRITA | | | | |
| | | C7, C8 i C9. Planificar, produir i revisar textos | CC9. Cerca i gestió de la informació i la | | | | |
| | | escrits de tipologia diversa, aplicant | consulta lingüística. | | | | |





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| | estratègies de textualització i | CC10. Criteris de selecció i valoració de la |
|--|--|---|
| | millorar-lo segons el propòsit comunicatiu | informació. |
| | amb l'ajut de suports. | CC11. Estratègies per a la planificació. |
| | | CC12. Adequació, coherència i cohesió. |
| | | CC13. Estratègies de revisió, correcció, |
| | | reparació i presentació. |
| | | CC14. Estratègies d'interacció escrita. |
| | | CC15. Producció creativa. |
| | | CC16. Ús de diccionaris. |

| 4. 21 st CENTURY COMPETENCES | | | | |
|---|--------------|-----------------------------------|--------------|--|
| Collaboration | \checkmark | Information, media and technology | \checkmark | |
| Communication | \checkmark | Leadership & Responsibility | \checkmark | |
| Critical Thinking and Problem Solving | \checkmark | Initiative & Self-direction | \checkmark | |
| Creativity & Innovation | \checkmark | Social & Cross-cultural | \checkmark | |
| Others: | | | | |

| 5. KEY COMPETENCES | | | | | |
|--|--------------|--------------------|--------------|--|--|
| Communicative, linguistic and audiovisual competence | \checkmark | Digital competence | \checkmark | | |





| Mathematical competence | \checkmark | Social and civic competence | \checkmark |
|--|--------------|---|--------------|
| Interaction with the physical world competence | \checkmark | Learning to learn competence | \checkmark |
| Cultural & artistic competence | \checkmark | Personal initiative and entrepreneurship competence | \checkmark |

| 6. CONTENT (Knowledge and Skills) | | | | | |
|--|--|--|--|--|--|
| CONTENT-RELATED KNOWLEDGE | CONTENT-RELATED SKILLS | | | | |
| CONTENT IMC Food pyramid Nutrients vs Food Basal Metabolic Rate Types of diet Carbon footprint Nutrition systems Cell metabolism LANGUAGE Nutrition Vocabulary Writing language: o make questions, o conditionals, o instructional text, o summarize. Communicative language | LEARNING skills: Applying critical thinking in the research of information (management information) and in the improvement proposals. Being creative designing experiments and making the poster. Solving the problem of your research. Communicating correctly your research. Collaborating in the team work. LITERACY skills: Using accurate and proper vocabulary. Writing language Communicative language LIFE skills: Being collaborative in the team work Being curious for solving the challenge of your research. Being reflective in your conclusions. Being critical with your research. SCIENCE skills: Applying scientific method: Making questions to solve a problem. Writing hypothesis using conditional Searching information from reliable sources. Designing experiments using instructional text. Identifying independent and dependent variable in the experiment. | | | | |
| | Graphing and discussing the results. | | | | |







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• Justifying the conclusions.

7. REFERENCES

https://www.amoebasisters.com/ Wizer.me

https://www.superteachertools.us/instantclassroom/#.XIU7LqhKjIU

8. COMMENTS (optional)

This project revolves around two challenges:

- The challenge to carry out a formal scientific research and to share their results in a public congress.
- The challenge to organize the congress event.

The methodology to reach the objectives of these two challenges is different, on the one hand students apply the scientific method through team work to end up in an oral presentation where they must use English for communication and a poster which synthesizes the results of their research. On the other hand, preparing the congress involves working in commissions which must work cooperatively in a real situation in school outdoors conditions.

9. ACKNOWLEDGEMENTS (optional)

Skills: R: reading , S:speaking, L: listening, W: writing, I: Interaction

Interaction: T-S: teacher-student, S-S: student-student, SG: small groups, WG: whole group, S-Expert, S-World Assessment: PA: Peer assessment, SA: Self-assessment, TA: Teacher assessment, AT: Assessment tools

| | 10. UNIT OVERVIEW | | | | | | | | |
|---------|-------------------------|------------------|--------|---------------|-----------------------|--------------------------------|--|--|--|
| Session | Activities | Timing | Skills | Interaction | ICT | Assessment | | | |
| | | Ö | × | | | Q | | | |
| | BIOMOLECULES | | | | | | | | |
| 1 | FISHBOWL TECHNIQUE | <mark>60'</mark> | I - S | T-S S-S SG | Amoeba Sisters videos | SA | | | |
| | FOOD NUTRIENTS GAME | | | | | | | | |
| 2 | GAME | <mark>60'</mark> | I | S-S SG | | | | | |
| | PRE-RESEARCH ACTIVITIES | | | 1 | 1 | 1 | | | |
| 2 | SCIENTIFIC METHOD | <mark>50'</mark> | I-R | S-S SG | Wizer.me Activity | | | | |
| 5 | RESEARCH PROPOSALS | <mark>20'</mark> | I-R | T-S WG S-S SG | | | | | |
| | LOGBOOK | <mark>20'</mark> | I-W | S-S SG | | TA SA <mark>AT - Rubric</mark> | | | |
| л | RESEARCH ACTIVITIES | | | | | | | | |
| 4 | EXPERIMENTAL DESIGN | <mark>60'</mark> | I-R-S | S-S SG | Moodle doc. guide | SA PA TA AT | | | |







| | | 1 | 1 | | | | |
|---|-----------------------------------|------------------|-------|---------------|---------------------------------------|--|--|
| | EXPERIMENTAL | 3h | I-R-S | S-S SG | ТА | | |
| | DATA ANALYSIS AND DISCUSSION | SSION 60' | | S-S SG | ТА | | |
| | CONCLUSION | <mark>60'</mark> | I-S-W | S-S SG | ТА | | |
| | COMMUNICATION - Poster | <mark>60'</mark> | I-S-W | S-S SG | SA PA TA | | |
| | COMMUNICATION - Oral Presentation | <mark>60'</mark> | I-S-W | S-S SG | SA PA TA AT | | |
| | CONGRESS ORGANIZATION | | | | | | |
| 5 | COMMISSIONS PROPOSALS | 30' | I-W | S-S SG W | PA TA AT | | |
| | COMMISSIONS DEVELOPMENT | 1h30' | I-W | S-S SG W | PA TA AT | | |
| | CONGRESS OF EXPERTS | | | | | | |
| 6 | PREVIOUS PREPARATION ACTIVITIES | 1h | I | T-S S-S | PA TA <mark>AT - Rubric</mark> | | |
| O | CONGRESS | 4h30' | I-S | S-S S-P WG | PA TA <mark>AT - Rubric</mark> | | |
| | POST CONGRESS TIDY UP | 30' | I | T-S S-S | PA TA <mark>AT - Rubric</mark> | | |
| 7 | PROJECT EVALUATION | | | | | | |
| 1 | PROJECT EVALUATION | 1h | I-S-W | T-S S-S SG WG | PA TA <mark>AT - Rubric review</mark> | | |

11. SESSION PLANNING

SESSION 1: Biomolecules

Objectives of the session: Learn the different types of nutrients that our bodies need and their components (biomolecules). Discover what functions these nutrients apport to us.

Content-obligatory language for the session: Nutrients, carbohydrates, lipids, proteins, nucleic acid, biomolecules, building blocks.

Activities

include : Name and description; Assessment tool (if any); Material (including language support)









| | FISHBOWL TECHNIQUE | | | | | |
|-----|--|------------------|-------|-----|--------|-----------------|
| | 1st - Students are distributed in four groups of experts of six students. Each group watches a different video about | | | | | |
| | nutrients (VIDEO LINKS: carbohydrates, lipids, nucleic acid and proteins). | | | | | |
| | Then students are re-distributed in groups of 4 joining an expert in each one of the topics. | | | | | |
| | 2nd - The groups are given a set of sentences that summarize the videos. The information in the sentences has | | | | | |
| | been cut up in two halves and scrambled. Together they have to unscramble the sentences. | | | | | |
| | 3th - The same groups must connect now the sentences with the different topics and make a concept map in a | | | | | |
| 1.1 | poster with this information. | <mark>60'</mark> | I - S | S-S | Moodle | <mark>SA</mark> |
| | Materials | | | SG | videos | |
| | 1 Laptop/group | | | | | |
| | Biomolecules scrambled sentences exercise. (Solution) | | | | | |
| | A piece of wrapping paper. | | | | | |
| | Images representing: biomolecules, elements, carbohydrates, lipids, nucleic acid. | | | | | |
| | Language support | | | | | |
| | Nutrients Scaffolding sheet | | | | | |

| | SESSION 2: Food nutrients game Objectives of the session: Discover the nutrients in different groups of food. | | | | | | | | |
|-----|---|------------------|---|-----------|--|---|--|--|--|
| | Content-obligatory language for the session: Proteins(vegetal and animal), vitamins, fats (good and bad), antioxidants, carbohydrates, minerals, fiber, energy, growth and digestion. | | | | | | | | |
| | Activities include : Name and description; Assessment tool (if any); Material (including language support) | 8 | | | | Q | | | |
| 1.1 | GAME <i>Rules</i> - Students work in groups of four.Each group is provided with a set of 13 cards and copy of the instructions. Each student is given 3 cards and copy of the checking chart. One of the cards is selected in secret and the students must discover which one it is and therefore the example of group food it represents. To do so they must ask each other in turns about the qualities and nutrients of their cards and finally they must deduce which is the missing | <mark>60'</mark> | I | S-S SG | | | | | |







| one. | | | |
|--------------------|--|--|--|
| Materials | | | |
| Game Instructions | | | |
| <u>1 cards set</u> | | | |
| | | | |

| | SESSION 3: Pre-research activities | | | | | | | | |
|-----|--|-----|-------------|------------------------|-------------------------|----|--|--|--|
| | Objectives of the session : Learn how to carry out a scientific research following the correct steps of the scientific method. Distribute students in groups and choose the topic that they want to investigate about. | | | | | | | | |
| | Content-obligatory language for the session: Scientific method: observation, research, hypothesis, experiment, data(qualitative and quantitative), variable (dependent and independent), group (control and experimental) conclusion, share results) and logbook. | | | | | | | | |
| | Activities include : Name and description; Assessment tool (if any); Material (including language support) | 8 | | | | Q | | | |
| 1.1 | SCIENTIFIC METHOD 1st - Students have to connect through a link to an wizer.me to do an activity about the scientific method. 2nd - Watch the videos, discuss the answers in groups and and send them. Materials 1 Laptop/person | 50' | I-L- R-W | S-S SG | Wizer Activity | | | | |
| 1.2 | RESEARCH PROPOSALS 1st - Students are distributed in groups of four. We use the Instant Classroom web. 2nd - They have to discuss and choose which topics they would prefer to work and fill the worksheet. 3rd -The teacher assigns a topic to each group based on their requests. Materials Choose proposals worksheet Different topic proposals | 20' | I-R- W | T-S WG S-S SG | Instant Classroom | | | | |
| 1.3 | LOGBOOK | 20' | I-W | S-S | <i>Moodle</i> Google | TA | | | |







| 1st - Students download the logbook file from the moodle. | | | | |
|---|--|----|----------|----|
| 2nd - Share the document between them and the teachers through DRIVE. | | | | |
| In this logbook they will report, every day, their work and progress in the research. | | 66 | . | SA |
| Materials | | SG | Drive | AT |
| 1 Laptop/group | | | | |
| Logbook template | | | | |

| | SESSION 4: Research activities | | | | | | | | |
|-----|---|---------|--------|---------|-----------------|-----|--|--|--|
| | Objectives of the session: Students design their experiments, carry them out, collect data, analyze them and finally re | each so | me con | clusion | s which th | ney | | | |
| | must reflect in a poster and oral presentation. | | | | | | | | |
| | Content-obligatory language for the session: As there are 12 research topics the range of vocabulary is very varied and it's up to the students to discover | | | | | | | | |
| | the key words they need as they go on in their research process. | | | | | | | | |
| | Activities | | | | | | | | |
| | include : Name and description; Assessment tool (if any); Material (including language support) | Å | | | | | | | |
| | | | 40 | | | | | | |
| | | | | | | | | | |
| | EXPERIMENTAL DESIGN | | | | | | | | |
| | <i>1st</i> - Students think and write the questions they want to answer in their research. | | | | | | | | |
| | 2nd - They develop the hypothesis using a conditional structure. The hypothesis is the answer that they expect to | | | | | | | | |
| | get to the questions they have written. | | | | | | | | |
| | 3rd - Students explore the bibliography provided for each research proposal to acquire the key vocabulary and | | | | | SA | | | |
| 1.1 | concepts which are fundamental for their work. | 60' | I-R-S | S-S | Moodle Guide | PA | | | |
| | Finally they design the experiment they want to carry out to test their hypothesis. | 00 | 111.5 | SG | document | TA | | | |
| | Materials | | | | | AI | | | |
| | 1 Laptop/person | | | | | | | | |
| | Different topic proposals | | | | | | | | |
| | Language support | | | | | | | | |
| | First conditional sentences revision. | | | | | | | | |







EXPERIMENT

Students must carry out their experimental part.

| 1.2 | 1rt - They must design their investigation trying to answer their investigable questions. 2nd - They need to make a plan about the research steps taking into account: Identify independent and dependent variable if that were the case. Is there any control variable that they can introduce in their research? Keep all other variables fixed. Write an instructional text explaining the methodology that they will follow. 3rd - Do their experiment and collect data. Materials Laptop/person Different topic proposals sheet Some other materials will be different in each group depending the kind of the experiment they want to do. Language support Instructional text revision. | <mark>3h</mark> | I-R-S | S-S SG | ТА |
|-----|---|------------------|-----------|-----------|----------------|
| 1.3 | DATA ANALYSIS AND DISCUSSION 1st - Students must graph and analyze their experiment data. | <mark>60'</mark> | I-S- W | S-S SG | ТА |
| 1.4 | CONCLUSION 1st - Students should write and graph (if necessary) their conclusions. | <mark>60'</mark> | I-S- W | S-S SG | ТА |
| 1.5 | COMMUNICATION POSTER Students must summarize all their work in a poster. Including: the hypothesis, the experiments, the data analysis and conclusion. ORAL PRESENTATION 1st - Students must write what they would say during the congress in order to explain their research to the audience. 2nd - They must distribute their text to all the group members. 3rd - Presentation rehearsal. | <mark>60'</mark> | I-S- W | S-S SG | SA PA TA |







| | SESSION 5: Congress Organization | | | | | | | | | |
|-----|---|-----|-----|----------------|--|----------------|--|--|--|--|
| | Objectives of the session: To prepare the final congress where they will present the results of their researches. | | | | | | | | | |
| | Content-obligatory language for the session: | | | | | | | | | |
| | Activities include : Name and description; Assessment tool (if any); Material (including language support) | 8 | | | | Q | | | | |
| | COMMISSIONS PROPOSALS | | | | | | | | | |
| 1.1 | Students are presented the different tasks which are required to carry out the congress. These tasks are grouped in a set of commissions with different functions. Students enrol in the different commissions according to their interests and abilities under the teachers surveillance. The commissions include: Time and space management. Registration. publication and recording. Public relations. Area of news through the website. | 30' | I-W | S-S SG W | | PA TA AT | | | | |
| | - Services area. | | | | | | | | | |
| | - Graphic area. | | | | | | | | | |
| | Materials | | | | | | | | | |
| | 1 Laptop/person Choose commissions worksheet Commissions tasks sheet | | | | | | | | | |
| | COMMISSIONS DEVELOPMENT | 1h | I-W | S-S | | PA | | | | |
| 1.2 | Students start to work and develop the tasks and functions listed in each commission. | 30' | | SG | | TA | | | | |
| | The commissions tasks include: | | | W | | AT | | | | |







| - Time and space management: in charge of the spaces, the location of posters, planning the congress | | | |
|---|--|--|--|
| schedule through the events timeline. | | | |
| - Registration. publication and recording: in charge of preparing a book of abstracts, making a poster of the | | | |
| congress, and recording the congress events as well as interviewing attendees. | | | |
| - Public relations: in charge of searching and contacting the guest speakers and presenting them the day of | | | |
| the congress, inviting other personalities. | | | |
| - Area of news through the website: write news about the congress process and the congress itself and | | | |
| publishing them on the website, including short video presentations. | | | |
| - Services area: in charge of preparing a simple snack, detail ingredients, equipment, finding | | | |
| sponsoring, dealing with the required equipment for the congress day: laptops, projector, sound equipment. | | | |
| - Graphic area: in charge of creating the congress logo, ID cards for guests and attendees, checking in | | | |
| attendees. | | | |
| Program area: in charge of creating a leaflet of the congress with the main information. | | | |
| Materials | | | |
| 1 Laptop/person | | | |
| Commissions tasks sheet | | | |

SESSION 6: Congress of experts

Objectives of the session: To carry out the congress performing the different tasks which each group has been appointed and present orally the results of their investigations.

Content-obligatory language for the session: Students design their experiments, carry them out, collect data, analyze them and finally reach some conclusions which they must reflect in a poster and oral presentation.

Activities

include : Name and description; Assessment tool (if any); Material (including language support)



1.1 **PREVIOUS PREPARATION ACTIVITIES**







| | Students must set up the congress room, snack, expert speakers welcome, access control and all the things they will need to make a good congress. | | | S-S | TA <mark>AT -</mark> Rub ric |
|-----|--|-----------|-----|------------------|---|
| 1.2 | CONGRESS As the congress will be organized and made by the students it is thought to be done in two turns. Doing it this way allows to exchange roles, while one half of them shows their researches the other half will be in charge of the organization tasks, and vice versa. The half which will be in charge of the organization will be the audience for the other half as well. Materials Each group poster Language support Personal oral presentation notes | 4h30 , | I-S | S-S S-P WG | PA TA <mark>AT -</mark> Rub ric |
| 1.3 | POST CONGRESS TIDY UP Students must clean up the congress hall and dispose of the waste it has generated. | 30' | I | T-S S-S | PA TA <mark>AT -</mark> Rub ric |

APPENDIX:

Introductory activities videos and activities:

To introduce the topic of Nutrition we did several activities which analysed the contents of the teachers' and students' fridges. We include here some links with examples of the activities and some videos recorded while the students were doing them.

| Student speaking about her frid | <u>ge video 1.</u> | Student speaking about h | <u>er fridge video 2.</u> | Student speaking about her fridge video 3. |
|---------------------------------|--------------------|--------------------------|---------------------------|--|
| My fridge scaffolding sheet | Kahoot about | students' fridges. | Class activity speakin | ng about teachers' fridges sheet |
| Students speaking about teache | ers fridges video | 1 Students speaking | about teachers fridges | video 2 |
| Students speaking about teache | ers fridges video | 3 Students speaking | about teachers fridges | video 4 |
| Students speaking about teache | ers fridges video | <u>5</u> | | |







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