



LEARNING FOR LIFE

TEACHERS' GUIDELINE

TALKING TO MEDICINAL PLANTS



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

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project number: 2016-1-ESO1-KA201-025091

PARTNERSHIPS



salestarrak
URNIETA

Salesianos Urnieta Salesiarrak (Spain)

Project coordinator

Asier Irazusta

airazusta@salesianosurnieta.com



Agrupamento de Escolas Rosa Ramalho (Portugal)

Teresa Teixeira

erasmus@aerosaramalho.pt



Gimnazjum nr 3 im. Noblistow Polskich w Zespole Szkol nr 2 w Swidniku (Poland)

Marcin Pańnikowski

mpasnikowski@tlen.pl



LICEUL "ALEXANDRU CEL BUN" Botoșani (Romania)

Mihaela Cornelia Achihăiței

mihaelaachihaittei@yahoo.com

eman ta zabal zazu



Universidad
del País Vasco

Euskal Herriko
Unibertsitatea

Universidad del País Vasco (Spain)

Kristina Zuza

kristina.zuza@ehu.eus



Pixel (Italy)

Lorenzo Martellini

lorenzo@pixel-online.net

TABLE OF CONTENTS

PROJECT DETAILS	1
DISCIPLINARY OBJECTIVES AND CROSS-DISCIPLINARY OBJECTIVES ..	3
SEQUENCE OF TASKS.....	5
INDICATORS	6
TASKS.....	7
PREVIOUS TASKS.....	7
RESEARCH / DEVELOPING TASKS	11
FINAL TASKS	25

**PROJECT DETAILS**

SCHOOL YEAR	2017-2018
SCHOOL YEAR LEVEL	9 th grade (14-15 years old)
TERM	
SESSIONS	30-35 hour
TITLE	TALKING TO MEDICINAL PLANTS
SUBJECTS	Sciences (Biology, Chemistry, Physics), Mathematics, Languages, ICT, Arts
UNIFYING THREADS (DRIVING QUESTIONS)	<p>Do you know about the importance of using medicinal plants to maintain health?</p> <p>Do you recognize the medicinal plants?</p> <p>What are the therapeutic effects of the medicinal plants?</p> <p>What is the period for the collection of medicinal plants?</p> <p>What are the ways of preserving the medicinal plants?</p> <p>How do we obtain tinctures from the medicinal plants?</p> <p>How are medicinal plants used (teas, tinctures etc.)?</p>





KEY COMPETENCES	A: TRANSVERSAL COMPETENCES	
	COMPETENCE (EU)	TASKS
	1.Learning to learn	4-6-7-8-9-10-11-12-17
	2.Sense of initiative and entrepreneurship	1-3-4-5-6-7-8-9-10-12-17-18
	3.Social and civic	2-3-13-17-18-19
	B: SUBJECT COMPETENCES	
	COMPETENCE (EU)	TASKS
	4.Communicating in the mother tongue	2-14-15-16-18
	5.Communicating in a foreign language	14-15-16
	6.Digital	3-4-14-15-16
	7.Mathematical, scientific and technological	5-6-7-8-9-10-11-12-18
8.Cultural awareness and expression	12	





MULTIPLE INTELLIGENCES	INTELLIGENCE	TASKS
	1. Interpersonal	1-2-3-4-5-7-8-9-10-11-13-14-15-17-18-19
	2. Intrapersonal	1-3-4-5-6-7-12-13
	3. Visual-spatial	12-14-15
	4. Bodily-kinesthetic	
	5. Musical-rhythmic	
	6. Verbal-linguistic	2-14-15-18
	7. Logical-mathematical	7-12-14-15
	8. Naturalistic	7-8-9-10-11-12
DISCIPLINARY OBJECTIVES and CROSS-DISCIPLINARY OBJECTIVES What do we want students to understand? (COMPREHENSION GOALS)	DISCIPLINARY OBJECTIVES and CROSS-DISCIPLINARY OBJECTIVES	
	MAIN OBJECTIVE:	
	Studying and awareness of the use of medicinal plants in maintaining health?	
	0.General objectives	
	0.1. Learning to work in teams and control teamwork	
	1.Science	
	1.1. Recognition and description of the medicinal plants	
	1.2. Knowledge of the therapeutic effects of medicinal plants	
	1.3. Knowing the period of harvest of the medicinal plants	
	1.4. Knowing the methods of preserving the medicinal plants	
1.5. Drying of the medicinal plants		
1.6. Obtaining some tinctures from the medicinal plants		



	<p>2.Mathematics</p> <p>2.1. Making mathematical calculations</p> <p>2.2. Performing transformations of units of measurement</p> <p>3.Foreign Language (English)</p> <p>3.1. Learn specific vocabulary: medicinal plants, preservation, therapy, health, teas, tincture, drying of the medicinal plants</p> <p>3.2. Improve reading skills</p> <p>4.Mother tongue</p> <p>4.1. Improve communication skills (oral and writing skills)</p> <p>5.ICT</p> <p>5.1. Data Processing in Tables</p> <p>5.2. Learning to edit information in various programs</p> <p>5.3. Searching for information on the web and downloading images and information from different web sites</p> <p>6.Arts (Visual Education)</p> <p>6.1. Drawing sketches for different models of medicinal plants bags</p> <p>6.2. Using different types of line and colour</p>
PROJECT PRESENTATION	The presentation of the project will be carried out by a special guest (specialist / biologist / chemist) in a special frame. It is possible to prepare a stand for the presentation of the bags with dried medicinal plants, accompanied by a presentation sheet with useful pictures and useful information about them. The obtained tinctures can be presented in bottles / vials. There will be a brochure of medicinal plants (which contains the medicinal presentation sheets)
FINAL PRODUCT	Brochure of medicinal plants and an exhibition with medicinal plants presented in little bags



SEQUENCE OF TASKS

Tasks in bold are necessary, and the rest are optional. They depend on the teachers involved in the project and the school facilities.

A. PREVIOUS TASKS

1. **Task: Team dynamics**
2. **Task: Project presentation**
3. **Task: Team planning**
4. **Task: What I know - What I need to know**
5. **Task: Design Sample Models, Information Sheets and Brochures of Medicinal Plants, named Responsibilities**

B. RESEARCH / DEVELOPING TASKS

6. **Task: Information from parents, grandparents, specialists, internet about the medicinal plants used to treat various diseases**
7. **Task: Identify the areas in the city and surrounding areas where the medicinal plants can be harvested**
8. **Task: The collection of the medicinal plants**
9. **Task: Winter conservation of the medicinal plants**
10. **Task: Obtaining mixtures of medicinal plants for certain diseases**
11. **Task: Obtaining tinctures from the medicinal plants**
12. **Task: Making bags for keeping dry the medicinal plants**
13. **Task: Plan the team / group evaluation**
14. **Task: Preparing dry medicinal plants for the exhibition**
15. **Task: Preparing the fiches and the brochure with medicinal plants**
16. **Task: Translating the fiches and the brochure of medicinal plants into English**

C. FINAL TASKS

17. **Task: Organisation of the exhibition with medicinal plants**
18. **Task: Dissemination of the brochure with medicinal plants**
19. **Task: Final team planning assessment**





INDICATORS

MAIN OBJECTIVE

Studying and awareness of the use of medicinal plants in maintaining health?

0. General objectives

- 0.1.1. The student achieves team objectives
- 0.1.2. The student achieves individual objectives
- 0.1.3. The student fulfils his/ her responsibilities

1. Science

- 1.1.1. Identification of medicinal plants
- 1.1.2. Enumeration of plant parts used in treatments
- 1.2.1. Enumeration of therapeutic indications
- 1.2.2. Presentation of mixtures of medicinal plants for different diseases
- 1.3.1. Identifying the period of collection of medicinal plants
- 1.4.1. Presentation of methods for preserving medicinal plants
- 1.5.1. List the drying conditions of medicinal plants
- 1.6.1. Explaining how to obtain tinctures from the medicinal plants

2. Mathematics

- 2.1.1. Calculation of the quantity of medicinal plants for therapeutic mixtures
- 2.1.2. Calculating the weight of medicinal plants and alcohol for tinctures

3. Foreign Language (English)

- 3.1.1. States the terms: medicinal plants, preservation, therapy, health, teas, tincture, drying of medicinal plants in foreign language
- 3.2.1. Expresses technical terms in the foreign language

4. Mother Tongue

- 4.1.1. Make the presentation of the project (oral and writing skills)
- 4.1.2. Make the presentation of the products (oral and writing skills)

5. ICT

- 5.1.1. Use software to produce photos, documents, Power Point presentation
- 5.2.1. Write and edit presentation sheets and brochures

TOOLS:

- Rubrics
- Reflections and evidences



**TASKS****PREVIOUS TASKS**

1. Task: Team dynamics*			Sessions: 1 h
COMPETENCES	Social and civic	INTELLIGENCES	Interpersonal Intrapersonal
GOALS	Learn to work in teams		

*(Attention: If the student group persists from the previous task, it will not be necessary to implement this task)

Task description:

In order to know each other, everyone will tell his name and two qualities who begin with the same letters as his name (Ex. If the name is Paul Colbin, two qualities could be: persuasive and creative). Then, you will talk about your answers in groups and will try to identify other qualities of each other.

After you will know each other, you can choose another 3 or 4 colleagues to make a team. The teacher will help you, in order to create a real team. You may read the “Belbin for students” and define/choose your roles in your team.

See annexe: “Belbin for students”.

Websites to explore:

<http://www.belbin.com/media/1336/belbin-for-students.pdf>

2. Task: Project presentation			Sessions: 1 h
COMPETENCES	Social and civic Communicating in the mother tongue	INTELLIGENCES	Interpersonal Verbal-linguistic
GOALS	Learning to work in teams and control teamwork Improve communication skills (oral and writing skills)		

Task description:



You are a group of people from the local community and want to run a campaign in order to raise awareness about the importance of the cultivation of the medicinal plants and their effects on people's health.

Therefore, you need to prepare an exhibition of dried medicinal plants, presented in little bags and tinctures made from these plants, presented in bottles or vials. All these will be presented to the other members of the community and interested companies. You will also prepare a small brochure, which gathers in one place all the presentations of the exposed medicinal plants. For this activity you will have 7-8 weeks.

In groups, you will identify the areas where you can collect the medicinal plants, collect them, dry them for preservation, make different bags that you will fill with dried medicinal plants for presentation in the exhibition that you will organize.

During this project, you will prepare, produce, publish and disseminate a brochure (paper and digital). The project and its products will be presented to the community (colleagues, teachers, parents, other people in the local community).

The presentation of the project will be carried out by organizing a small exhibition illustrating the theme of the project.

The school principal will present the title and the theme of the project, followed by the presentation of each preserved medicinal herb, based on the presentation sheet accompanying each bag, their health benefits and the teas gained from the activities.

Teacher's notes:

During the presentation of the project, we must motivate the students. The presentation of the project should be appealing. It is very important to create a special atmosphere to get motivation. This is the moment when we can increase their interest. In order to present this project, it is essential to involve all stakeholders or to support the action (specialists / biologists / chemists, director, parents' association, other members of the local community or a special guest).

It is also convenient, when there is more than one class, to gather all classes in your school or another partner or school on the network and present the project to all students together. Apart from the client, the teachers who will participate in the project will also be present at the presentation of the project, supporting the students who organize the exhibition.

It is recommended that you create a special moment and choose a special place to present the project through the exhibition that illustrates the theme of the project.





The school principal will present the title and theme of the project, after which the pupils will present the bags with the medicinal plants and finally invite all participants to watch the final product: the exhibition of medicinal plants and bottles / tincture flasks, accompanied by the drawings presentation and brochure ("Tour of the gallery").

3. Task: Team planning			Sessions: 1 h
COMPETENCES	Social and civic Sense of initiative and entrepreneurship Digital	INTELLIGENCES	Interpersonal Intrapersonal
GOALS	Learning to work in teams and to control teamwork		

Task description:

You will work in teams. So, each team will define its team planning, which will consist of three parts: team objectives, individual objectives and responsibilities. In this respect, every team may write on a piece of paper some objective. After that, you will discuss together and select the most relevant objectives.

All teams will have four objectives: two will be the same for every team, and the other two will be defined by each team.

Each of you will have 2 individual objectives: one suggested by your team and the other suggested by yourself. After each of you are agree with the objectives, the teacher will assign the responsibilities for each of you.

Teacher's notes:

A special approach by the teacher, as a project coordinator, for collaborative teams, is Management by Walking About. This method assumes that the teacher reserves enough time to interact with the team, whether there is a specific reason or not.

See annexe: "Belbin for students"

Websites to explore:

<http://www.belbin.com/media/1336/belbin-for-students.pdf>

https://www.mindtools.com/pages/article/newTMM_72.htm (Management by Walking About)





and more

http://www.hbs.edu/faculty/Publication%20Files/12-113_9a2bc5e8-2f70-4288-bb88-aeb2de49e955.pdf

<http://www.economist.com/node/12075015>

<http://fortune.com/2012/08/23/management-by-walking-around-6-tips-to-make-it-work/>

4. Task: What I know – What I need to know			Sessions: 1 h
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Digital	INTELLIGENCES	Interpersonal Intrapersonal
GOALS	Learn to work in teams and to control teamwork		

Task description:

You will work in teams. You will consider what you already know about the project and what you need to know in order to carry it out. For this purpose, each team will receive a paper with two columns: 1. I know; 2. I want to know/What I need to know. Then, you must think about what you know and what you need to know to solve the problems about the project that you must prepare.

Example:

I know (in this column you note facts, elements you already know about the subject)	I want to know/What I need to know (In this column you note all the aspects, details you want to know/are necessary for the subject).

Teacher's notes:

The teacher will pay special attention to students' answers, and based on these answers he/she will suggest suitable tasks to carry out the project. The teacher will follow the existence of cognitive anchors in student mind and experience; he will try to help the students to find these anchors. The teacher can use the method "Johary window". The teacher will initiate discussions and will establish necessary correlations in order to illustrate the importance of the planning and running of the activities.

See annexes T4 "Johary window" and 4T WHAT I KNOW - WHAT I NEED TO KNOW - WHAT I'VE LEARNED.





5. Task: Design Sample Models, Information Sheets and Brochures of Medicinal Plants, named Responsibilities			Sessions: 30 min
COMPETENCES	Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Intrapersonal
GOALS	Learning to work in teams and to control teamwork		

Task description:

Each team will have a task that you will either agree or draw: designing the little bags, designing the medicinal plants, presentation sheets, designing the brochure with presentation of the medicinal plants and the blending made for therapeutic purposes. You will set the number of photos / images and their sizes; divide tasks between members of the team. To do this, everyone needs to reach an agreement.

Teacher's notes:

The teacher will support students in setting the aspect of the bags, presentation sheets, the number of pictures/photos and the agreement content.

RESEARCH / DEVELOPING TASKS

6. Task: Information from parents, grandparents, specialists, internet about the medicinal plants used to treat various diseases			Sessions: 2 h
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Interpersonal
GOALS	Recognition and description of the medicinal plants Knowledge of the therapeutic effects of medicinal plants Knowing the period of harvest of the medicinal plants		

Task description:

The activity you will carry out for the task is:

1. Documentation on medicinal plants
2. The processing of the data obtained and its interpretation.





To carry out this activity, you will form working teams that will be documented for 6 days from different specialty treatises or the Internet about the medicinal plants that your parents have spoken to:

1. The name of the medicinal plant
2. Picture of the medicinal plant
3. Composition
4. Parts of the plant to be used in treatments
5. Precautions and contraindications
6. The harvest period of the plant
7. Therapeutic indications

All collected information will be transferred to a table provided by the teacher. In the next class, each team of students will present to your colleagues the collected information.

Teacher's notes:

The students will be announced that they need to take information from their family members (parents, brothers, grandparents) about the medicinal plants they use at home for the prevention and treatment of various diseases.

The information obtained from the family will be discussed in the next class. Starting from this information, in the next 6 days the group of students will search information from different specialty treatises or the Internet about the medicinal plants that their parents have spoken to.

The collected information will be noted in a table of the form:

Name of the medicinal plant	Picture of the medicinal plant	Composition	Parts of the plant used in treatments	Precautions and contraindications	Plant harvest period	Therapeutic indications

In the next class, the groups of students will present to their colleagues all the information they have collected.





7. Task: Identify the areas in the city and surrounding areas where the medicinal plants can be harvested			Sessions: 2 h
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Intrapersonal Logical-mathematical Naturalistic
GOALS	Recognition and description of the medicinal plants Knowledge of the therapeutic effects of medicinal plants Knowing the period of harvest of the medicinal plants		

Task description:

You will participate in an activity to identify areas in the city or surrounding areas where medicinal plants can be harvested. The activity will take place on teams. Each team will group the information as follows:

1. The name of the medicinal plant
2. The harvest period
3. Parts of the plant to be harvested
4. The area where the herb was identified
5. Picture of the medical plant.

You can use a local map in any format (google maps or other applications).

The remarks from the field will be noted in a table provided by the teacher. Observations will be brought to the attention of colleagues in the next class, in the form of a PPT presentation.

Teacher's notes:

In this activity, the students will identify areas where medicinal plants can be harvested.

The will work in teams. Based on the data collected by the colleagues, close to the plant harvest period, they will identify the areas in the city and surrounding areas where these medicinal plants can be harvested. The field remarks will be noted in a table and in a map of the city:

Name of the medicinal plant	Plant harvest period	Parts of the plant to be harvested	The area where the medicinal plant was identified	Picture with the medicinal plant



8. Task: The collection of the medicinal plants			Sessions: 4 h
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Naturalistic
GOALS	Recognition and description of the medicinal plants Knowing the period of harvest of the medicinal plants Knowing the methods of preserving the medicinal plants Drying of the medicinal plants		

Task description:

For this activity, you will be documented from the Internet or from the parents, grandparents, specialists about the optimal periods of medicinal plants harvesting.

After collecting theoretical data, you will go on the field, with the teacher, to harvest the medicinal plants in the areas identified by you and your colleagues. During the collection of the medicinal plants, you will take photos of the collected medicinal plants to use them in creation of the presentation sheets and the presentation catalogue.

After collection, the medicinal plants will be stored in the school for drying and winter conservation.

Teacher's notes:

You will support the teams to carry out their work. You will ensure that the activity is carried out without risks.

Activities:

1. Students are informed that in this activity they will harvest, on a team basis, different medicinal plants from the identified areas.
2. The teacher presents the itinerary to the students. Plant harvesting will be organized for 1-2 hours. Each team will have to collect at least 5 types of medicinal plants, takes photos, and presents them to the other colleagues.
3. Upon returning to the class, each team will store the herbs, with optimum conditions, such that the harvested plants will not be deteriorated before the next activity.





9. Task: Winter conservation of the medicinal plants			Sessions: 2 h
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Naturalistic
GOALS	Knowing the methods of preserving the medicinal plants Drying of the medicinal plants Making mathematical calculations Performing transformations of units of measurement		

Task description:

On this stage, you need to prepare the medicinal plants for winter conservation purposes. For this activity, you will work on teams. For two days you will sort the herbs by removing the parts of other plants or parts of the same plant that are not intended for collection (for example, flower leaves, insect-leaved leaves, brownies, and so on). After sorting, the herbs will be naturally dried at ambient temperature in dry, well-ventilated, dust-free, insect-free places. The duration of natural drying varies with the seasonal and seasonal products. Thus, during summer the leaves, flowers and herbs dry out within 3-7 days. Roots or bark dries much slower for 20-30 days. A properly dry medicinal plant remains whole, retaining its characteristic smell.

Before you dry the plants, you must weight them. After drying, you must weight again, in this way you can obtain the humidity content, as a difference between the weight of the fresh plants and the weight of the dried plants.

Teacher's notes:

Prepare the spaces for storing and preserving medicinal plants collected by the students and guides the students during their work so that they can properly sort the plants. You can set rules for cleansing and sorting the collected medicinal plants: removing parts of other plants or parts of the same plant that are not intended for collection (for example, flower leaves, leaf insects, brownies etc.).

Support students to weight the plants and to calculate the humidity content.

You will provide students with information such as:

- After sorting, the herbs will be naturally dried at ambient temperature in dry, well-ventilated, dust-free, insect-free places.
- The duration of natural drying varies with the seasonal and seasonal products. Thus, during summer the leaves, flowers and herbs dry out within 3-7 days.





- The roots or bark dries much slower for 20-30 days.
- A properly dry medicinal plant remains whole, retaining its characteristic smell

10. Task: Obtaining mixtures of medicinal plants for certain diseases		Sessions: 2 h	
COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Naturalistic
GOALS	Recognition and description of the medicinal plants Knowledge of the therapeutic effects of medicinal plants		

Task description:

In this activity, you will use the MOZAIC method.

1. Making learning groups

You will form 5 learning groups in which each student will receive a number from 1 to 5 (Fig. 1).

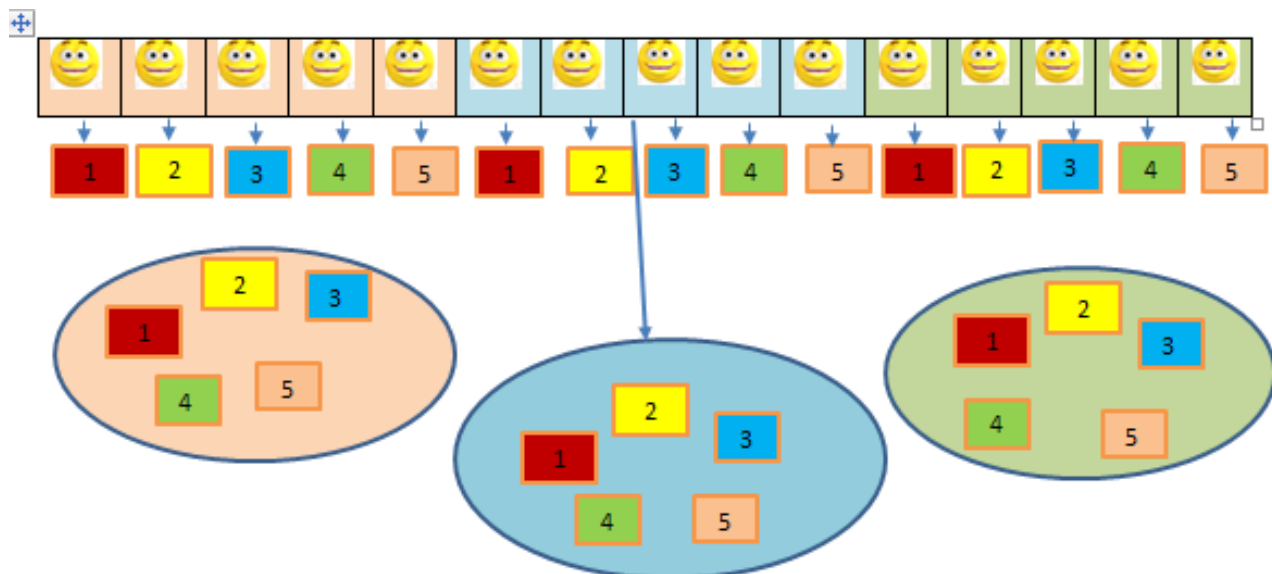


Fig. 1. Making learning groups.

2. Making groups of "experts":

You will form 3-5 groups of "experts" (depending on the number of students in the class!) (Fig. 2),

Thus: Students with the number 1 will form the group of "experts" 1 and study Material 1; students with the number 2 will form the "expert" group 2 and study Material 2; Students with the number 1 will form



the "expert" group 3 and study Material 3; Students with the number 1 will form the "expert" group 4 and study Material 4; the 5th students will form the "expert" group 5 and study Material 5.

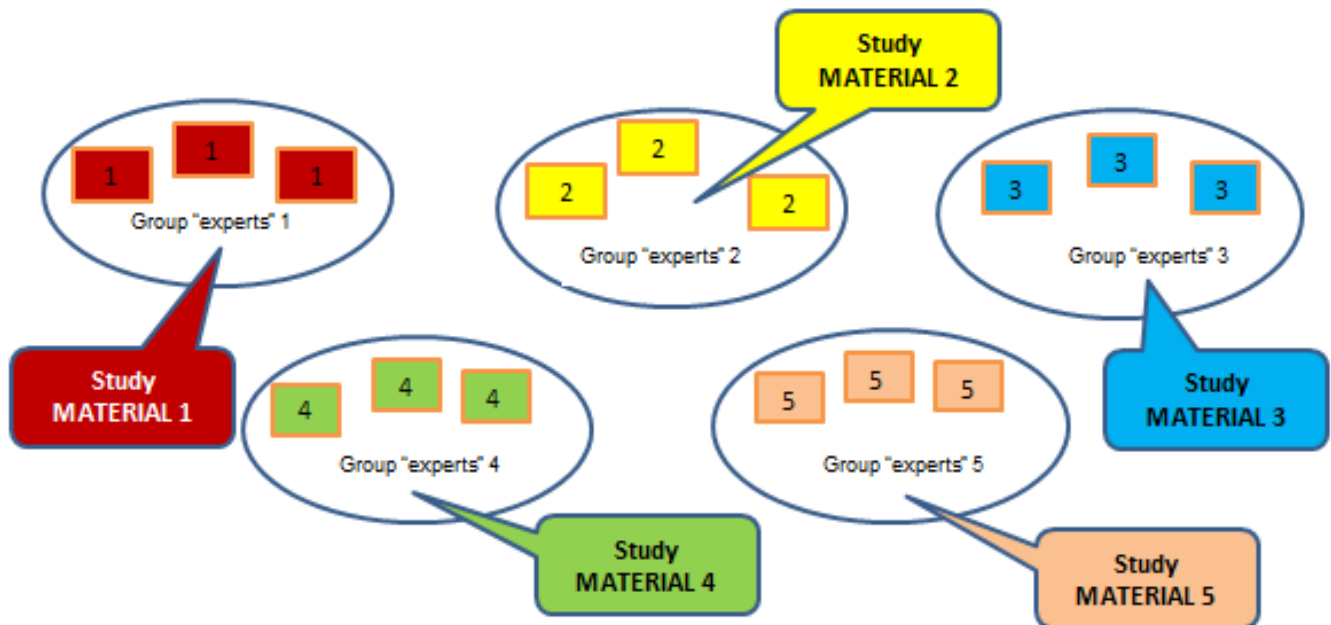


Fig. 2. Making groups of "experts".

Each material will contain information about a particular affection and plants that could improve it.

3. Regrouping in learning groups

Each "expert" presents the studied material to the other colleagues in the learning group (Fig. 3), and at the end of the activity each participant knows the whole content related to the topic, namely all 5 types of diseases and the plants / plant mixtures which could improve them.

Each learning group will have 5 herbal mixtures, one for each condition presented in the documentation.

Diseases and medicinal plants will be made available by the teacher under the name of Material 1, Material 2, Material 3, Material 4, Material 5 (fewer materials may be used if less affections are targeted).

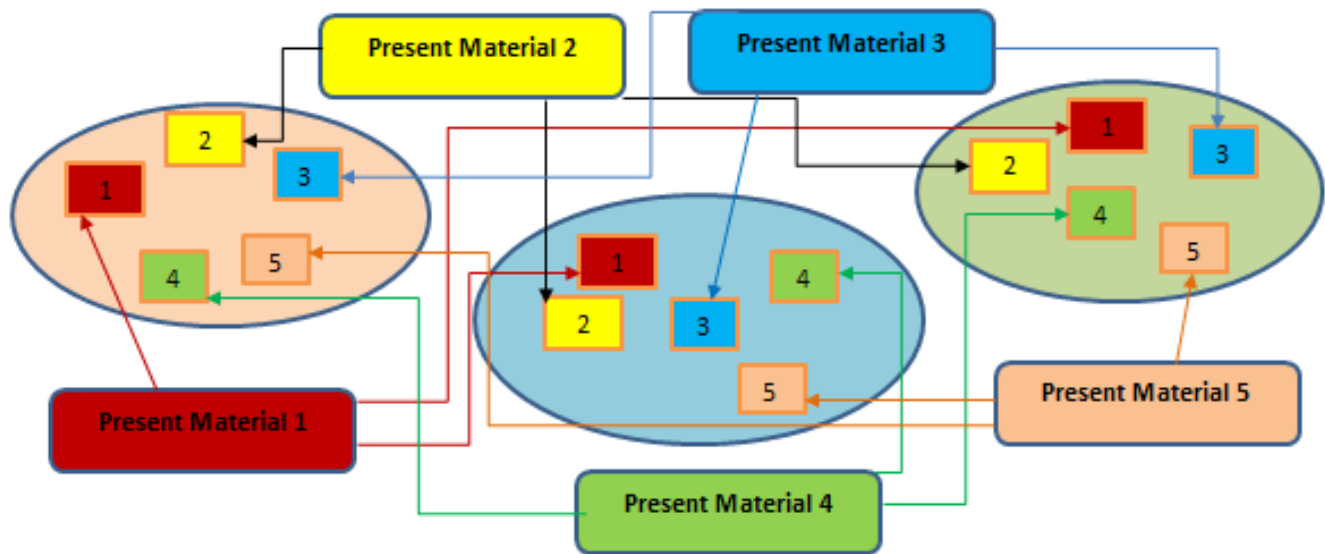


Fig. 3. Regrouping in learning groups

Teacher's notes:

Students will be organized into groups to study the material about medicinal plants used to treat various body system disorders:

- Group 1 - Digestive Disorders: Material 1
- Group 2 - Respiratory diseases: Material 2
- Group 3 - Cardiovascular disease: Material 3
- Group 4 - Kidney disease: Material 4
- Group 5 - Nervous system disorders: Material 5

Using sources of scientific information (Treatise on the Use of Medicinal Plants), students will be documented about the percentage of each plant in the mixes and the amount they need to obtain.

Under the teacher's guidance, students will make different blends of dried herbs to treat certain conditions.

You will support students in forming learning groups and "expert" groups. You will provide students with information about diseases and plants / plant mixtures beneficial for their treatment / amelioration.

MOZAIC Learning Cooperative Technology promotes a better learning process, improves student motivation, and allows for a larger volume of content to be studied and shared by group members. Many teaching resources, including movies and websites, can be used:



<https://www.youtube.com/watch?v=091DDL2j3-I>

<https://www.youtube.com/watch?v=xMpXZ8eTgxA>

<https://www.youtube.com/watch?v=Znyywbsfr70>

<https://themysteriousworld.com/top-15-most-powerful-medicinal-plants/>

<http://www.momtastic.com/webcoist/2008/09/30/most-powerful-potent-medicinal-medical-plants-in-nature/>

<https://articles.mercola.com/sites/articles/archive/2014/09/01/medicinal-plants.aspx>

11. Task: Obtaining mixtures of medicinal plants for certain diseases			Sessions: 2 h
COMPETENCES	Learning to learn Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Naturalistic
GOALS	Recognition and description of the medicinal plants Knowledge of the therapeutic effects of medicinal plants Obtaining some tinctures from the medicinal plants		

Task description:

As part of this activity, you need to prepare tinctures from the herbs.

You will form teams of three students each.

In the first part of the activity, knowing the plants you picked, each team will select 6 recipes of tinctures from the Internet.

Each team will make a colourful cube (each team will have another colour of the cube) (Fig. 4). Write prescriptions on cube faces. Change cubes between teams.

Under the teacher's guidance, from medicinal plants collected by colleagues, you will sort the plants for tinctures, depending on recipes written on the faces of your cube. The plants or flowers used for tincture will first be crushed.

Procedure:

The plants or flowers used to prepare the tincture, after shredding, are placed in a bottle over which alcohol is poured. The bottle is hermetically sealed and allowed to soak for 12 days. During this time,





the container should be shaken daily. Finally, the tincture squeezes and pours into small, dark bottles. The tincture thus obtained can also be used for two years.

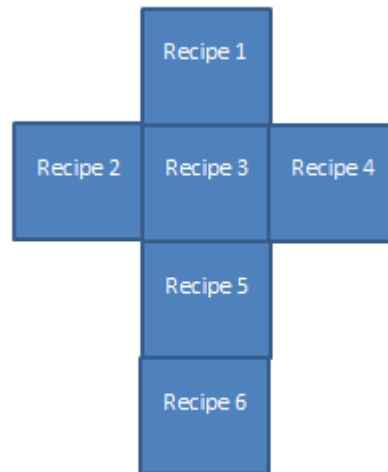


Fig. 4. Cube desing with prescriptions

Assessment tools (rubrics ...):

It will be assessed.

Use the Individual / Group Assessment Sheet for T6/

Teacher's notes:

Students will be documented on tincture recipes, which they can get from the harvest plants, diseases which can be treated or relieved, and the effects of tinctures on these diseases.

The teacher has to provide the diseases and necessary materials to obtain the tinctures: bottles, alcohol, tools for cutting / grinding plants, etc. It is recommended to organize the activity in the chemistry laboratory, where there are standard conditions for the use of the alcohol required to obtain medicinal plants tinctures.

For this activity, the Cube Method can be used. The teacher prepares coloured sheets of paper from which students will create cubes on the faces of which they will write tincture recipes. The class will be divided into groups, each group having the task of finding and preparing 6 herbal tincture recipes from those written on the sides of the cube.

12. Task: Making bags for keeping dry the medicinal plants

Sessions: 2 h





COMPETENCES	Learning to learn Sense of initiative and entrepreneurship Mathematical, scientific and technological Cultural awareness and expression	INTELLIGENCES	Intrapersonal Visual-spatial Logical-mathematical Naturalistic
GOALS	Searching for information on the web and downloading images and information from different web sites Drawing sketches for different models of medicinal plants bags Using different types of line and colour		

Task description:

As part of this activity, you must make bags for storing dry plants. From the textiles and tools / utensils you have at your disposal, make bags for storing dry plants so that they do not lose your properties and at the same time have an aesthetic look.

You will work in pairs and you will achieve sachets of different sizes. Each team must have at least 5 sachets.

Pre-production:

- Browse the Internet with sack patterns to inspire you to make bags from the materials you have at your disposal. Some examples are shown in Fig. 5.



Fig. 5. Bags Design

Teacher's notes:

You will provide to the students information and support for:





- selecting the shape and size of the bags.
- making bags.

13. Task: Team planning assessment			Sessions: 1 h
COMPETENCES	Social and civic	INTELLIGENCES	Interpersonal Intrapersonal
GOALS	Learning to work in teams and control teamwork		

Task description:

You will assess all the objectives established in the 3rd task, individual and team objectives as well as the responsibilities to reflect upon the things you are doing well and the issues that must be improved.

Assessment tools (rubrics ...):

It will be assessed.

T6_Individual Group Assessment Sheet

Teacher's notes:

See annexes - T6_Individual Group Assessment Sheet

Websites to explore:

<http://www.belbin.com/media/1336/belbin-for-students.pdf>

14. Task: Preparing dry medicinal plants for the exhibition			Sessions: 2 h
COMPETENCES	Communicating in the mother tongue Communicating in a foreign language Digital	INTELLIGENCES	Interpersonal Visual-spatial Verbal-linguistic Logical-mathematical
GOALS	Improve communication skills (oral and writing skills) Learning to edit information in various programs		

Task description:



After making the bags, you will fill them with dry plants, preparing them for the exhibition.

For this purpose, you will need to:

- Determine the amount of dried plants that you need to fill the sachets, correlating it with the size of the pouch.
- Weigh the dry plants for each bag.
- Fill the bags with weighed dry plants.
- Make and apply labels

You will be organized into groups. Each group will prepare for the exhibition at least 5 bags. For this purpose, the following steps must be followed:

1. Weighing dried plants
2. Filling the bags with dry plants
3. Developing and applying labels with the name (scientific and popular) of the plants contained in each bag.

At the end of the activity, each group presents the bags prepared for the exhibition to the other colleagues.

Teacher's notes:

The teacher supports the students during the course of their work.

You will provide students with information and support for:

- establishing the quantity of dried plants for each type of bag
- weighing dried plants
- the correct association of labels with bags content

15. Task: Preparing the fiches and the brochure with medicinal plants			Sessions: 2 h
COMPETENCES	Communicating in the mother tongue Communicating in a foreign language Digital	INTELLIGENCES	Interpersonal Visual-spatial Verbal-linguistic Logical-mathematical
GOALS	Improve communication skills (oral and writing skills) Learning to edit information in various programs		



**Task description:**

You will work in the same groups as previous task. For each bag, you will compile a spreadsheet containing: plant image, information on the contained substance and the list of diseases for which it is beneficial.

For this task you must use the computers. You will select the most suitable application to edit documents and insert images into them.

You will work on teams, produce a template / template for each application and show others.

Together, you will select the most beautiful and complete model for cards.

You can use Photoshop, Paint or any editing program.

Care must be taken to use correct words and expressions. You must describe the photos.

After completing the presentation sheets, you will produce the Presentation of Medicinal Plants in Sachets by enclosing all the presentation sheets in one presentation material.

Teacher's notes:

Teacher will supervise the teams working and will give them suggestions to improve their work. The teacher will ensure logistic (computers and software) Teacher must survey the students work and correct them.

16. Task: Translating the fiches and the brochure of medicinal plants into English			Sessions: 1 h
COMPETENCES	Communicating in the mother tongue Communicating in a foreign language Digital	INTELLIGENCES	Verbal-linguistic
GOALS	Improve communication skills (oral and writing skills)		

Task description:

You will use a teacher's template and in teams you will write the specific terms: herbs, preservation, therapy, health, teas, tincture, medicinal herbs drying, etc. Then the list will be translated into English at the English language with the help of the teacher and / or the web, the dictionary.





You will do the same with verbs. Then you will all develop a common list that will be translated into English at English with the help of the teacher and / or the web, the dictionary.

You can use dictionaries for translation. You can share the content and each of you translates a sequence. At the end, you'll end up with the sequences and get the full content.

Assessment tools (rubrics...):

This task will be assessed: Each team will assess a part of the presentation sheet translated by another team, assisted by an English teacher, who will correct you. You will use the vocabulary list to correct the texts. Finally, the presentation sheets and the brochure will be in a correct form, ready to be exposed and disseminated.

Teacher's notes:

Teacher will supervise the teams working and will give them suggestions to improve their work. The teacher will ensure logistic (computers and software). Teacher must survey the students work and correct them.

FINAL TASKS

17. Task: Organisation of the exhibition with medicinal plants			Sessions: 30 min
COMPETENCES	Learning to learn Social and civic Sense of initiative and entrepreneurship	INTELLIGENCES	Interpersonal
GOALS	Learning to work in teams and control teamwork		

Task description:

Once you have finished the presentation sheets layout and the pictures to be exposed, you will give to those who are responsible to verify and correct it. If is necessary, you will modify so make sure the layout is well written and structured.

Once the layouts are done, you will revise the posters in order to avoid possible mistakes.

After that, you must organize the exhibition, talking with institutions representatives and make a placement scheme of the posters and drawings.



**Teacher's notes:**

Teacher will supervise the teams working and will give them suggestions to improve their work. The teacher will ensure logistic (computers and software). Teacher must survey the students work and correct them.

18. Task: Dissemination of the brochure with medicinal plants			Sessions: 3 h
COMPETENCES	Sense of initiative and entrepreneurship Social and civic Communicating in the mother tongue Mathematical, scientific and technological	INTELLIGENCES	Interpersonal Verbal-linguistic
GOALS	Improve communication skills (oral and writing skills)		

Task description:

You will need to prepare in class by hand and orally what you will say when you will disseminate the brochure. You will also rehearse in class.

You must identify the appropriate places where we could disseminate the brochure:

- Places which have helped as with the printing financing
- Local market
- Nearby local markets
- Local shops
- Radio
- Tv
- Schools partners
- Another schools

After identifying the places, you will work in teams to complete the task. All teams need to take part in the activity.

19. Task: Final team planning assessment			Sessions: 1 h
COMPETENCES	Social and civic	INTELLIGENCES	Interpersonal
GOALS	Learning to work in teams and control teamwork		





Task description:

You will assess the objectives and responsibilities established in the team planning before to reflect upon the things you have done well and the issues that must be improved.

Teacher's notes:

See annexes - T6_Individual Group Assessment Sheet and T1-T3- "Belbin-for-students"

Websites to explore:

<http://www.belbin.com/media/1336/belbin-for-students.pdf>

