DEMETER

Developing Interdisciplinary Methodologies In Education Through Enhanced Relationships Between Schools And Farms

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

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DEveloping interdisciplinary Methodologies in Education Through Enhanced Relationships between schools and farms

Guidelines

Vänersborgs kommun
Hushållnings sällskapet
Washingborough Academy
Values for Success
Università degli Studi di Milano Bicocca
SERN
Soil Association
Colégio do Sardão

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The indicators

The indicators identified to assess the effectiveness of farm-school collaborative practices were defined on the basis of six evaluation elements: school/farm collaboration, learning construction, interdisciplinary dimension, learning assessment and self-evaluation, inclusiveness and feasibility. Each of these factors has three levels that guide the measurement of the quality of the practice.

1 School/farm collaboration

Do teachers and farmers co-participate in the design of the practice?

- **Level 1:** teachers or farmers plan independently the practices and share only organizational aspects (the practice is accepted by school as a "turnkey package")
- **Level 2:** teachers and farmers design together organizational aspects of the practice taking into consideration certain elements related to children's learning (previous activities and experience, macro-goal).
- **Level 3:** teachers and farmers consider together the elements of the curriculum, the educational-didactic aims and students' learning (previous knowledge; previous activities and experience; learning outcomes) in order to define together specific outcomes and didactic methodologies of the practice

2 Learning construction

How is learning promoted and made visible to students?

- **Level 1:** children's learning is not made visible by teachers and farmers; they are not encouraged to share their previous knowledge; students can ask question during the practice but there are not problem-based activities and time to discuss about student's doubt or question.
- **Level 2:** children are asked to make visible previous knowledge related to the contents of the practice and teachers and farmers support them to make a connection both with everyday life and new contents; students are encouraged to ask questions and to have an active role during the practice, but there are not problem-based activities and debriefing moments that can support students reflection on their learning process.
- **Level 3:** children are encouraged to make visible their previous knowledge and to reflect on it before, during and after the experience; teacher and farmers propose to students not only active methodologies but also problem-based activities in order to promote durable and meaningful learning; before the end of the practice there is a debriefing moment aimed at the formalization of the experience.

3 Interdisciplinary dimension

Does the practice promote an interdisciplinary and systemic perspective on farming?

- **Level 1:** methodologies and contents from different disciplines are considered in the planning of the practice, but they are not integrated in a holistic perspective;
- **Level 2:** methodologies and contents from different disciplines are considered and integrated in an holistic perspective; students are encouraged to reflect on this approach holistic to knowledge;
- **Level 3:** the practice is design from a systemic and interdisciplinary approach (agro-ecological perspective to sustainability and knowledge); students are encouraged to reflect on this approach holistic to knowledge and are also invited to reflect on the connection between disciplines.

4 Assessment for learning and self-assessment

How is students' evaluation and self-evaluation realized?

- **Level 1:** learning promoted by the practice is not specifically assessed;
- **Level 2:** student's learning and student's self-assessment is assessed at the end of the practice through quantitative tools (satisfaction questionnaire; close-ended questions; multiple choice test; etc);
- **Level 3:** qualitative data (from group discussion; student's report; open-ended questions; etc) related to learning are collected before, during and after the practice both by teachers and farmers; students self-evaluated their learning process from the beginning of the practice and at the end of it their reflect individually and in group (through meta-cognitive instruments) on their learning experience.

5 Inclusiveness

Is group diversity supported as a learning resource?

- **Level 1:** the practice is not designed to include activities in small group;
- **Level 2:** the practice is designed to include small group activities;
- **Level 3:** small group activities and / or peer tutoring are designed to specific (individual and general) learning outcomes; groups are chosen according to the specificity of the children; Different teaching styles are adopted in order to support the learning diversity of the children.

Feasibility

6

Are organizational aspects coherent and adequate to the practice?

- **Level 1:** time, space, materials and professional resources are partially adequate for the objectives of the practice;
- **Level 2:** time, space, materials and professional resources are adequate for the objectives of the practice;
- **Level 3:** time, space, materials and professional resources are adequate and can be modified according to specific requests.

Top tips for successful school – farm links

Establish a link with a local farm

- Find a local farm to visit to create the inspiration for your food and farming activities.
- Plan the day with the farmer to ensure you get the most out of this real-world experience, leaving work books, quizzes and questionnaires in the classroom.
- Think about how your farm visit can form a platform for future leaning in the classroom.
- Consider a programme of link ups with your chosen farm / growing area throughout the year to see the changes in season.

Growing and cooking in school

- Take the farm experience into the school with small-scale growing, even using window boxes and plant pots if space is limited.
- Think about areas in the school grounds that could be used for vegetables, or even chicken keeping and bee-keeping.
- Consider how to look after these enterprises during school holidays and weekends, and plan what to grow accordingly.
- Develop cooking activities and taste education around the produce from the farm and school grounds
- Make the best of the skills and contacts of staff and parents at the school, you may find there are keen cooks and growers amongst them!

Link to the curriculum

- Farm links projects can be a valuable way to deliver the curriculum through real-world learning approaches, and this will help justify why you are running them in school.
- Consider what areas of the curriculum you could deliver through a farm link project, be creative and don't just think about science. Maths, history, design and ICT can all be delivered through field to school activities.
- Develop a plan to link the farm projects to the curriculum throughout the year, and with different age groups.

Make a link to the food in your school lunches

- 'Walk the talk' and consider the food that children eat in school – can this be from local producers?
- Think about a healthy tuckshop where pupils can produce healthy snacks, or offer a bowl of school-grown tomatoes on the dinner table.
- •Talk to your caterer about serving more local, seasonal and organic produce.

Link your activities to cultural events

- Look at the calendar and think about food-related cultural activities that can be celebrated through food and farming activity
- As well as traditional events such as harvest festivals and Christmas, consider other celebrations of different communities to bridge awareness and learning.

Investigate digital opportunities to create a farm to school link

- Maintain an ongoing link with the farm or growing site through email, social media or FaceTime/Skype to keep up to date with what is happening on the farm.
- Consider filming or recording elements of the visit that you can then use in class to create a news-story for other pupils and parents, or as a documentary record.
- Use the internet to discover more about farming and growing, and to promote your own school enterprise projects.

Use enterprise learning projects to raise funds for outdoor learning

- Farms and growing areas are businesses, so these links can be an ideal way to start thinking about enterprise learning projects.
- Consider selling food on a stall at school, being a drop-off point for a vegetable box scheme or even set up a regular farmers' market in the school hall.
- Involve the pupils with marketing, business planning and selling produce as a learning experience and involve parents and the wider school community.

THE TOOLKIT

The Toolkit[1] was developed as part of the Erasmus+ Project DEMETER (DEveloping interdisciplinary Methodologies in Education Through Enhanced Relationships between schools and farms). It is an easy tool for teachers and educators to design interdisciplinary school-farm learning pathways linked to the transversal objectives of the 2030 Agenda and to disciplinary learning objectives, in line with the philosophy that has guided the development of the project. It was developed on the basis of the learning objectives identified in the national school curricula of the four countries involved, United Kingdom, Italy, Portugal and Sweden.
The teaching practices experimented by the various partners involved have been documented and described using tools and indicators that allow them to be replicated in other contexts.

The **first part** of the toolkit contains guidelines for effective planning between the school and the farm, defining the role of teachers and farmers in co-design, which presupposes an exchange between the pedagogical-didactical knowledge of the former and the know-how of the latter.
The toolkit thus consists of a table cross-referencing the cards of the different practices implemented during the project on the basis of the objectives and thus enabling the teacher to select them on the basis of his or her own learning objectives and readapt them to his or her own context.
In addition, the rich photo and video documentation collected made it possible to share within the project team the strengths and weaknesses of the various paths and to reflect on the validity and replicability of the different experiences, and the possibility of viewing it is useful for restoring the complexity of the paths implemented.

The **second part** of the toolkit consists of the individual practice cards, compiled by the experimenting teachers following a template which guided them through the various phases of planning, monitoring and evaluating the children's learning.

List of the practices | **Sustainable Development Goals** | **School Subject** | **Transdisciplinary goals/ soft skills** | **European Key Competencies**

Name of the practice	Agenda 2030 SUSTAINABLE DEVELOPMENT GOALS	School Subject:		Transdisciplinary goals/ Soft skills		European key competencies	
 Cheese Making 	 Goal 2: Zero Hunger End hunger, achieve food security and improved nutrition and promote sustainable agriculture 2.4 Sustainable supply of food	language, written exp. recalls	To describe the process of making cheese in chronological order	cooperation	Collaboration between children during the procedure	Literacy competence	
		maths, measures	To measure mass and capacity accurately when making cheese	critical thinking	To reason about procedure and physical changes	Personal, social and learning to learn competence	
	 Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	biology, transformations	Physical changes that happen with cheese making: Use of the senses in order to describe different types of cheese			Citizenship competence	
	 Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.3 Halve per capita global food waste 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	history, local products	Local cheese			Cultural awareness and expression competence	
		geography	To identify the countries where different cheeses come from			Mathematical competence and competence in science, technology and engineering	

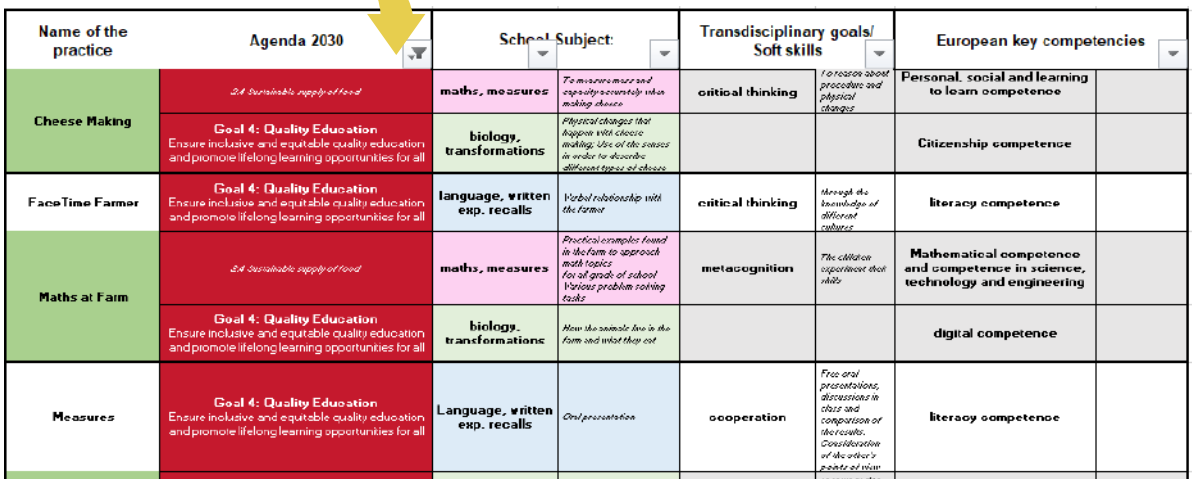
[1] Available in the 4 project languages:English, Italian, Swedish and Portuguese

Name of the practice	Agenda 2030 SUSTAINABLE DEVELOPMENT GOALS	School Subject:		Transdisciplinary goals/ Soft skills		European key competencies	
 Cheese Making	Goal 2: Zero Hunger End hunger, achieve food security and improved nutrition and promote sustainable agriculture 2.4 Sustainable supply of food	language, written exp. recalls	To describe the process of making cheese in chronological order	cooperation	Collaboration between children during the procedure	Literacy competence	
		maths, measures	To measure mass and capacity accurately when making cheese	critical thinking	To reason about procedure and physical changes	Personal, social and learning to learn competence	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	biology, transformations	Physical changes that happen with cheese making. Use of the senses in order to describe different types of cheese			Citizenship competence	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.3 Half per capita global food waste 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	history, local products	Local cheese			Cultural awareness and expression competence	
		geography	To identify the countries where different cheeses come from			Mathematical competence and competence in science, technology and engineering	
 FaceTime Farmer 	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	language, written exp. recalls	Verbal relationship with the farmer	critical thinking	through the knowledge of different cultures	literacy competence	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	biology, transformations	Periodic transformation update	rework		Multilingual competence	
		history, local products	Local Farms			Digital competence	Using face time
		geography	Farms in different countries			Personal, social and learning to learn competence	
						Citizenship competence	
						Cultural awareness and expression competence	
 Maths at Farm 	Goal 2: Zero Hunger 2.4 Sustainable supply of food	language, written exp. recalls	Students' diary about what they had learned	cooperation	Collaboration while in groups the children have to solve the problems	literacy competence	Using face time
		maths, measures	Practical examples found in the farm to approach math topics for all grade of school Various problem solving tasks	metacognition	The children experiment their skills	Mathematical competence and competence in science, technology and engineering	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	biology, transformations	How the animals live in the farm and what they eat			digital competence	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.3 Half per capita global food waste 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	history, local products	Local products made on the farm (milk, meat, vegetables, cereals..)			Personal, social and learning to learn competence	
						citizenship competence	
						cultural awareness and expression competence	
 Measures 	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Language, written exp. recalls	Oral presentation	cooperation	Free oral presentations, discussions in class and comparison of the results Consideration of the other's points of view	literacy competence	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	maths, measures	Lenght, mass, money and capacity	critical thinking	Becoming conscious about the role of maths connected in other subjects but also in real life	mathematical competence and competence in science, technology and engineering	
		biology, transformations	Plants			Personal, social and learning to learn competence	
		geography	Description of natural and human elements of the place where the pupils live				
 Pumpkin Party 	Goal 2: Zero Hunger 2.4 Sustainable supply of food 2.5 Maintain genetic diversity of seeds	Language, written exp. recalls	Elaborating simple written texts about the experiences (alno in groups)	cooperation	small groups activities	literacy competence	
		biology, transformations	Observing and experiencing on the field	critical thinking	students are encouraged to reflect on holistic approach to knowledge	Personal, social and learning to learn competence	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all			rework	graphic and verbal reworking	Citizenship competence	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.8 Ensure that people everywhere have awareness of sustainable lifestyles					Cultural awareness and expression competence	
 TastEd 	Goal 2: Zero Hunger 2.4 sustainable supply of food	Language, written exp. recalls	Content and language integrated learning about digestion, breathing, circulation and organs	cooperation	Work in group	literacy competence	
		biology, transformations	Content and language integrated learning about digestion, breathing, circulation and organs	critical thinking	About the preservation of the environment, consumption of healthy food and sustainability	multilingual competence	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	geography	Knowledge about places, regions and countries			Mathematical competence and competence in science, technology and engineering	
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.8 Ensure that people everywhere have awareness of sustainable lifestyles					digital competence	
						Personal, social and learning to learn competence	
 Winemaking 	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	language, written exp. recalls	Knowing how to tell and describe the experience lived(speaking and writing)	cooperation	Work in group	literacy competence	Using face time
	Goal 12: Sustainable consumption and production Ensure sustainable consumption and production patterns 12.2 Achieve sustainable management of natural resources 12.3 Half per capita global food waste 12.8 Ensure that people everywhere have awareness of sustainable lifestyles	maths, measures	portions and proportions of the ingredients (must and flour)	critical thinking	About local culture	multilingual competence	
		biology, transformations	causes and methods of transforming grapes into wine	rework	graphic and verbal reworking	Mathematical competence and competence in science, technology and engineering	
		history, local products	Explore the historical traces of the area and its traditions			digital competence	
		geography	transformations in the natural and anthropic landscape			Personal, social and learning to learn competence	
						cultural awareness and expression competence	

How does the table work?

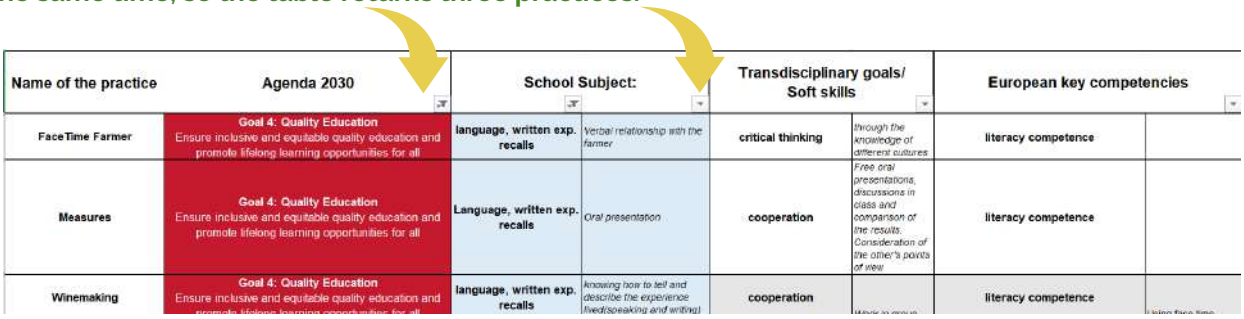
In the table you can view the practices by filtering according to the Sustainable Development Goals (SDGs), school subject, transdisciplinary objectives/transversal skills and European key competences of interest.

Eg. 1: In this case, SDG 4 - Quality Education is selected in the first column, so the table will show all practices related to SDG 4.



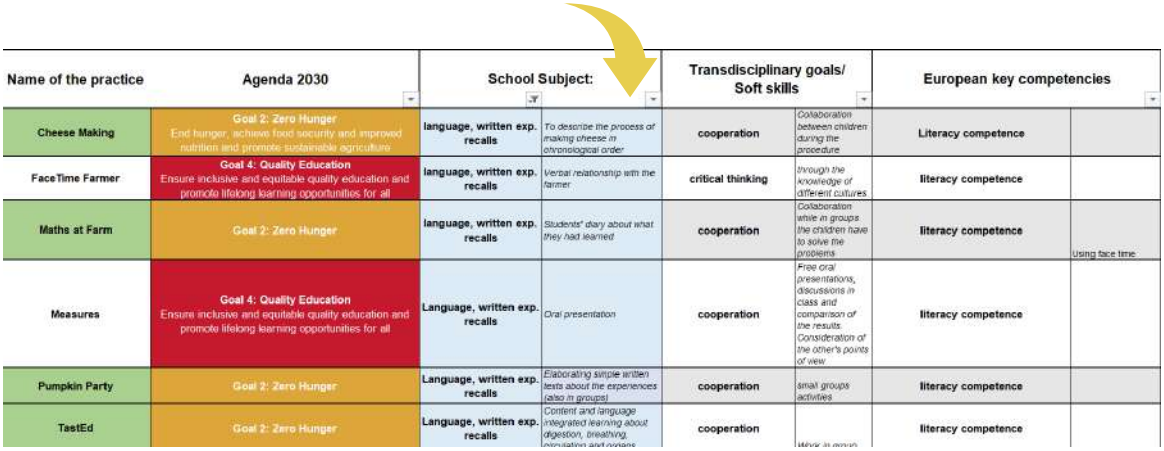
Name of the practice	Agenda 2030	School Subject:		Transdisciplinary goals/ Soft skills		European key competencies	
Cheese Making	2.4 Sustainable supply of food	maths, measures	To measure mass and capacity accurately when making cheese	critical thinking	To reason about procedure and physical changes	Personal, social and learning to learn competence	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	biology, transformations	Physical changes that happen with cheese making; Use of the senses in order to describe different types of cheese			Citizenship competence	
FaceTime Farmer	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	language, written exp. recalls	Verbal relationship with the farmer	critical thinking	through the knowledge of different cultures	literacy competence	
Maths at Farm	2.4 Sustainable supply of food	maths, measures	Practical examples found in the farm to approach math topics for all grade of school Various problem solving tasks	metacognition	The children experience their skills	Mathematical competence and competence in science, technology and engineering	
	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	biology, transformations	How the animals live in the farm and what they eat			digital competence	
Measures	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Language, written exp. recalls	Oral presentation	cooperation	Free oral presentations, discussions in class and comparison of the results. Consideration of the other's points of view	literacy competence	

Eg. 2: in this case, SDG 4 and the school subject "language and written expression" are selected at the same time, so the table returns three practices.



Name of the practice	Agenda 2030	School Subject:		Transdisciplinary goals/ Soft skills		European key competencies	
FaceTime Farmer	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	language, written exp. recalls	Verbal relationship with the farmer	critical thinking	through the knowledge of different cultures	literacy competence	
Measures	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Language, written exp. recalls	Oral presentation	cooperation	Free oral presentations, discussions in class and comparison of the results. Consideration of the other's points of view	literacy competence	
Winemaking	Goal 4: Quality Education Ensure inclusive and equitable quality education and	language, written exp. recalls	Knowing how to tell and describe the experience lived(speaking and writing)	cooperation		literacy competence	

Eg. 3: in this case only the school subject 'language and written expression' is selected.



Name of the practice	Agenda 2030	School Subject:		Transdisciplinary goals/ Soft skills		European key competencies	
Cheese Making	Goal 2: Zero Hunger End hunger, achieve food security and improved nutrition and promote sustainable agriculture	language, written exp. recalls	To describe the process of making cheese in chronological order	cooperation	Collaboration between children during the procedure	Literacy competence	
FaceTime Farmer	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	language, written exp. recalls	Verbal relationship with the farmer	critical thinking	through the knowledge of different cultures	literacy competence	
Maths at Farm	Goal 2: Zero Hunger	language, written exp. recalls	Students' diary about what they had learned	cooperation	Collaboration while in groups the children have to solve the problems	literacy competence	Using face time
Measures	Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Language, written exp. recalls	Oral presentation	cooperation	Free oral presentations, discussions in class and comparison of the results. Consideration of the other's points of view	literacy competence	
Pumpkin Party	Goal 2: Zero Hunger	Language, written exp. recalls	Elaborating simple written texts about the experiences (also in groups)	cooperation	small groups activities	literacy competence	
TastEd	Goal 2: Zero Hunger	Language, written exp. recalls	Content and language integrated learning about digestion, breathing,	cooperation		literacy competence	

PUMPKIN PARTY

SCHOOL: Primary School "P. Amaducci", Bertinoro
COUNTRY: Italy
GRADE: Second class of Primary School
CHILDREN AGE: 7-8 years old
TEACHERS: Mazzoni Elisa, Maraldi Chiara, Nardini Claudio
TESTING PERIOD : November 2019

LEARNING OUTCOMES

Observing and describing the environment, Collecting and classifying natural elements and objects, visits to farms and parks, observing pets and farm animals, observing plants, flowers, leaves, rocks and water, Working in couples or groups, writing a brief report about these experiences, recognizing certain aspects of British traditions, such as Halloween.

SCIENCE

- Exploring and describing natural and environmental elements
- Developing curious and respectful attitudes towards human beings and the environment.
- Observing and experiencing on the field.

ITALIAN

- Creating situations in which children begin to experience the different possibility of expression in different types of text;
- Inventing collective stories through sequences;
- Elaborating simple written texts about the experiences.

ARTS

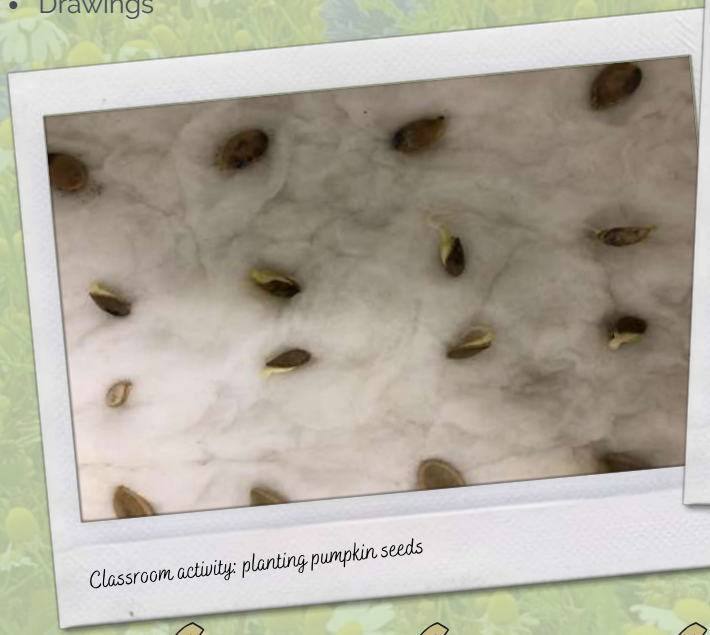
- Elaborating personal products in a creative way
- Observing and individualizing elements of the visual language.

LINK TO THE NATIONAL CURRICULUM

- Formulating questions, requests and answers about the situation;
- Verifying morphological changes in the life span, comparing aspects deriving from different parameters;
- Classifying living beings according to similarities and differences;
- Relating characteristics of the living beings (plants) and their habitats;
- Recognizing the existence of living beings from different groups;
- Describing human-made and natural elements in the environment;
- Expressing attitudes of solidarity and respect towards others;
- Showing sensibility towards the preservation of the environment, presenting interventional recommendations.

EVALUATION TOOLS USED

- Questionnaires
- Texts
- Drawings



Classroom activity: planting pumpkin seeds

Making some cookies

Arrive at Fattoria Bertozzi.

Let's make a pumpkin's cake!

How to cooks the biscuits.

Tools and material for the laboratory.

Indicators

1

SCHOOL/FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 3

All teachers and the didactic farm's owner previously met in order to decide together the activities to propose: we agreed about the experiences that the children would have done at the farm and how they could have been prepared in class before the visit.

2

LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 3

In the class, many lectures were proposed (in each subject: science, arts and Italian) about the life of plants in general, more specifically about the life of pumpkins. Each child spoke about his / her experience about the seeding, the birth and growing of the plants (certain children helped their parents or grandparents with their vegetable gardens).

During the visit at the farm, the farm's owners explained how to cultivate the pumpkin, telling the children where it is better to do it. Moreover, they showed them the different types of pumpkin. Children participated in an active way to the activity. After the visit at the farm, children baked a cake with pumpkin, and they sowed the seeds that they had found in the pumpkin.

At the end, the children wrote a report and illustrated the activities they had done.

3

INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 2

The teachers planned the activities in an interdisciplinary way and they made a documentation in which every subject contributed to a deeper knowledge of the topic.

4

ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 2

Children answered to some questions through the proposed questionnaires, before, during and after the experience at the farm. Moreover, they wrote a short report about the experiences they had done.

5

INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 2

During these activities, every child participated with his / her own knowledge (previously developed or acquired during the activity), telling it to the class.

6

FEASIBILITY

Are organizational aspects coherent and adequate to the practice?

LEVEL 3

The teachers, the children and the didactic farm's owners worked together respecting the times and their respective capabilities and potentialities. The goals were achieved.

MATHEMATICS ON THE FARM

SCHOOL: Brålanda e Skerrud
COUNTRY: Sweden
GRADE: 1 to 6 (Brålanda class 4, Skerrud class 2)
TEACHERS: Pontus Olsson and Anna-Lena Berg
TESTING PERIOD: October 2019 - February 2020

LEARNING OUTCOMES

The students should gain increased knowledge about different aspects of agriculture through mathematics. (MATHEMATICS, SCIENCE, SWEDISH, BIOLOGY)
Brålanda school: Through the subject mathematics and the subject Swedish, the students learned about how the pigs lived, what they ate, weight, how large were the areas they lived. Through the subject Swedish, we worked with the abilities to listen, ask questions, analyze / think. In the subject of mathematics, we worked with practical examples to calculate how much they ate, how big an area the boxes in the stable were.

Skerrud School: the students got to learn about how the cows lived. Each occasion had a theme around the cow. It was "Facts about the cow body", "Facts about milk", "From milk to cheese". The students learned mathematics and also biology. Based on the facts, various problem-solving tasks were done in mathematics

The students should gain increased knowledge about sustainability and food.
Skerrud: Students learned about the milk and how it can be used.
Brålanda: Students learned about the concept of "locally grown and produced", both cereals, vegetables and meat.

The students will have the opportunity to experience in reality the agricultural world related to mathematics through different senses. (MATHEMATICS, SCIENCE, SWEDISH)
Brålanda and Skerrud: Through Farmertime sessions, classrooms have the opportunity to meet a farmer and to get an input about their lifes, to talk about cows and milk or about pigs and meat production. Furthermore thanks to the realisation of fresh cheese, students have the opportunity to practice mathematics in a different way.

The students can follow the farmer´s job under the whole year and participate in it through mathematics.
Brålanda and Skerrud: Students had the opportunity to meet and follow the farmers´s work, during several months

LINK TO THE NATIONAL CURRICULUM

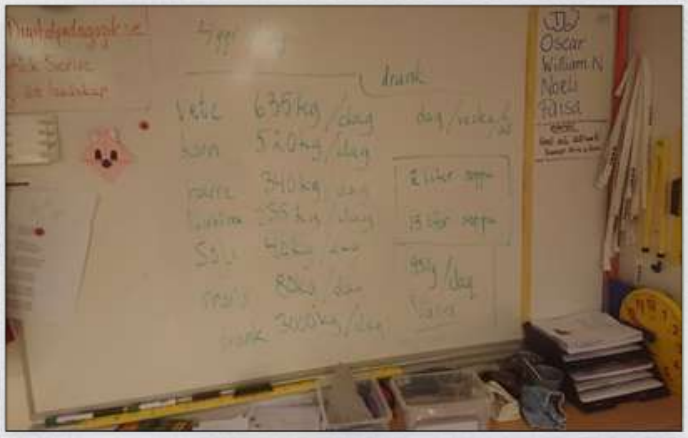
Grade 1:
Numbers: Natural numbers and their properties, as well as how the numbers can be divided and how they can be used. Natural numbers and simple numbers in fractions and their use in everyday contexts.
Grade 2:
SKERRUD: Problem solving: Mathematical questions based on simple everyday life.
Grade 3:
Measurement of length, volume, mass and time with ordinary contemporary and older units of measurement.
Grade 4:
Brålanda: Multiplication and division; Area and perimeter; Fraction; Geometry; Programming Equations; Measurement units (length) conversions; Problem solving.
Grade 5:
Fractions, percentage, decimal numbers; Circumference and area; Symmetry; Programming; Equations; Measurement Units Conversion (Weight); Problem solving
Grade 6:
Fraction, percentage, decimal numbers; Circumference and area; Statistics; Programming; Equations and expressions; Measurement Units Conversions (Volume); Problem solving

EVALUATION TOOLS USED

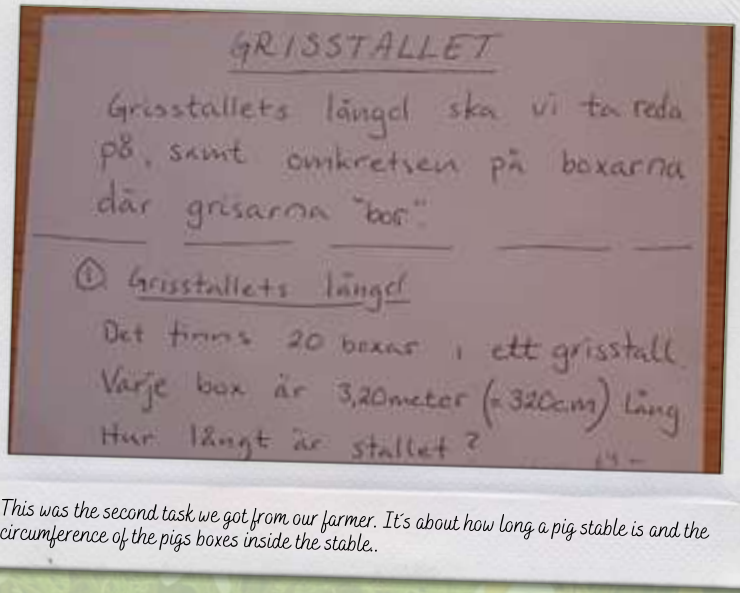
Brålanda: We used an evaluation material from the class' teaching materials in mathematics. Through that, we tested that the students had learned to calculate area, perimeter, use written statements in the four arithmetic methods. We worked on preparing questions for the farmers before our Farmer Time sessions. We started from the students' questions about what they wanted to know about farm animals, like pigs, about things that our farmers do and about the fact to work as a farmer today. After the Farmer Time calls, we summarized what was said. On the whiteboard in the classroom, we wrote down the tasks that the farmers gave us to solve.

Skerrud: We worked on preparing questions before the Farmer Time conversation and after the conversation the students had to write about what they had learned. Sometimes they wrote individually and sometimes together in class. The teacher provided words of support to help with the writing.
When the students worked on the problem-solving tasks, the teacher walked around and listened, thereby finding out what the students could do. Then, through joint conversations, the different solutions were discussed together in class.

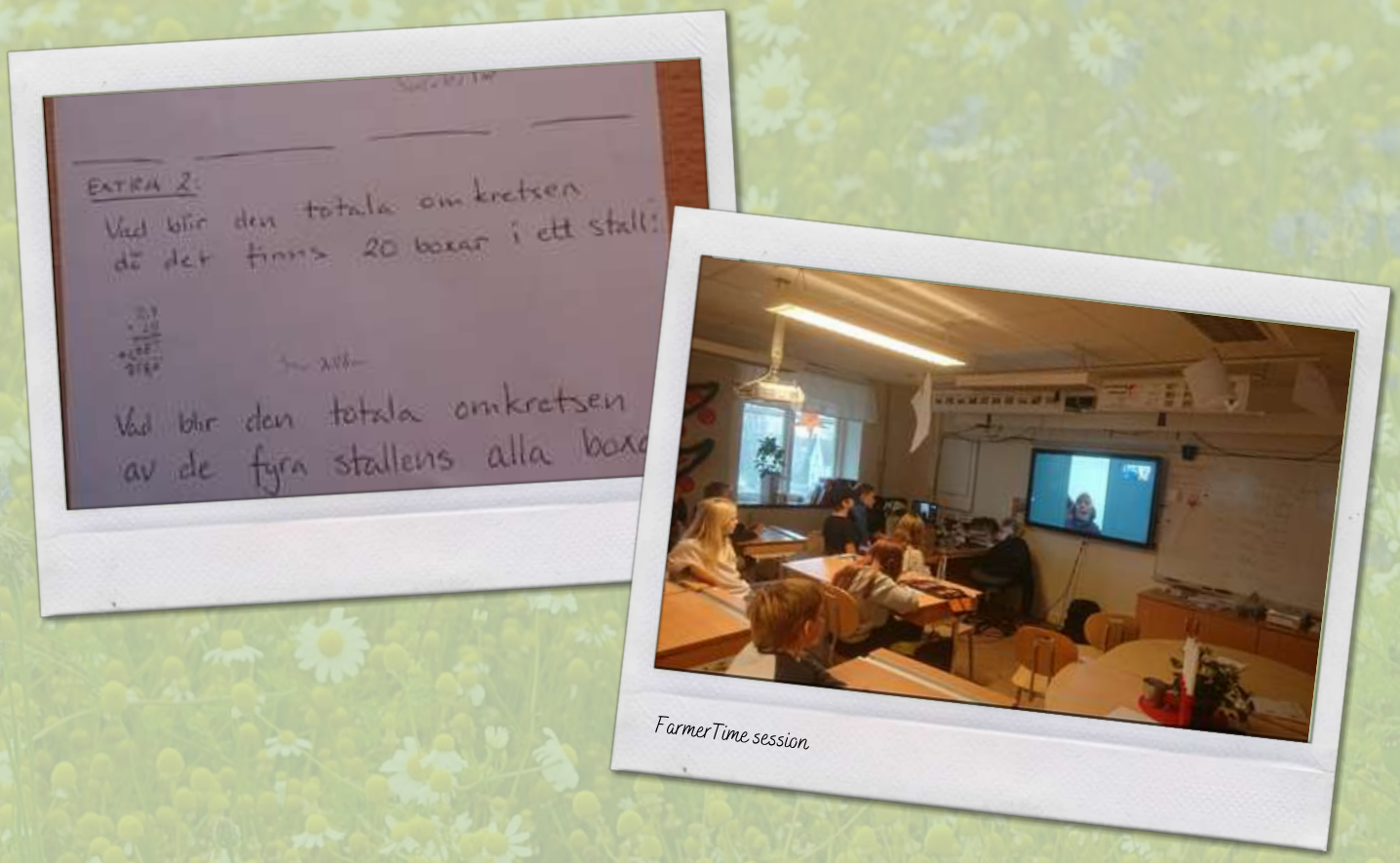
DOCUMENTATION COLLECTED



Here there is the first task that we got from our farmer. It's about how much do the pigs eat every day.



This was the second task we got from our farmer. It's about how long a pig stable is and the circumference of the pigs boxes inside the stable..



Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 2

According to the initiative Farmer Time, teacher contacts farmer to find out what is happening on the farm to prepare children's questioning and to inform the farmer of current learning to establish links.

We use Farmer Time as a method to connect mathematics in the classroom to what´s going on at the farm. Teacher and farmer have discussed current links together. In addition, students create their own questions which are included as an important part.

2 LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 2

Learning is constructed on problem-based activities connected to everyday life.
Based on the Farmer Time calls, the teacher creates problems that links to mathematics in different types of farming-situations. The teacher also tries to put students' previous knowledge into context when formulating the problems. One of the goals is to increase their interest for mathematics in general using mathematics applied in practical situations. We also strive to create a sense of participation and interaction as well as a holistic experience.
The practice is divided into three phases – preparation, implementation and follow-up:
Preparation involves finding out the student's prior knowledge, what they want to know, as well as preparing how this should be presented at the implementation.
In the implementation- phase, students have the opportunity to ask questions in order to receive new information and facts. They will also be given a new task to be solved before the next call.
During the follow-up phase the students discuss their new knowledge and work with the task that has been given to them. Creating mind-maps is a method to make the students' prior knowledge visible. By following instructions, we strengthen the ability to solve problems. Working together in groups, increases student's ability to take turns, plan and collaborate. Through joint reflection, a new common knowledge is developed. By using their different senses, students get to explore and create their own perception. Improved motivation as well as increased self-confidence by challenging themselves by daring to taste. Learning to put words into what you experience. Students' motivation is increased by linking the subject to real-life examples.

3 INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 2

Sustainable Development. Although the starting point is mathematics, there are plenty of examples of other subject connections. For example, biology, chemistry, social science and Swedish. This gives the students a holistic perspective, and shows the interaction between different subjects and events in every-day life.

4

ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 3

Problem solving in groups - conversation / communication
Joint discussions about mathematics and reflections
The students carry out diagnoses where they show their ability. Students may reflect (in writing and speech) on the basis of given questions according to the IPA model, which means working individual, in pairs, all together. They may write summaries of what they have learned.

5

INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 2

The group is considered as a learning resource.
Anyone can participate. We can adopt the practice to fit each student unique starting point.
The practice also involves learning from each other.

6

FEASIBILITY

Are organizational aspects coherent and adequate to the practice?

LEVEL 2

Time, space, materials and professional resources are adequate for the objectives of the practice. A farmer is needed for the Farmer Time call. High feasibility.

GRAPE HARVEST

SCHOOL: Primary School Carducci
COUNTRY: Italia
GRADE: 2nd grade
CHILDREN AGE: from 7 to 8 years
TEACHERS: Savoia Anna, Puccioni Lucia, Lodesani Anna, Marconi Andrea
TESTING PERIOD: September 2019 - May 2020

LEARNING OUTCOMES

ITALIAN LANGUAGE
Listening and Speaking: including the main information of the activity carried out, knowing how to tell and describe the experience lived.
Writing: to produce a simple text to tell the lived experience, to know how to recognize and appropriately use the new words learned.
HISTORY
To know and recognize the transformations that have taken place in one's living environment,
Explore the historical traces of the area and its traditions.

GEOGRAPHY

- Getting to know the surrounding area through a perceptual approach and direct observation.
- Individual transformations in the natural and anthropic landscape.

SCIENCE

- Know the causes and methods of transforming grapes into wine.
- Know the specific language used.
- Respect the environment and natural landscapes.

ART AND IMAGE

- Experimenting with different tools and techniques to create graphic and pictorial products,
- Represent and communicate perceived reality.

MUSIC

Production or repetition of nursery rhymes on the vintage or song of the fogarina grape (traditional)

"Knowledge is the daughter of experience"

The three-year plan of our Institute's training offer opens with this sentence by Leonardo Da Vinci, from which it takes its name.
We believe that this sentence summarizes well the main learning objectives of this, and each, didactic experience.
Our school identifies training objectives aimed at developing responsible behaviors inspired by knowledge and respect for legality, environmental sustainability, landscape heritage, heritage and cultural activities, through the enhancement of the school intended as an active community, open to the territory and able to develop and increase the interaction with families and with the local community, including third sector organizations and businesses.
This project / activity puts in place objectives and elements that constitute a positive innovation in the training offer, through new learning spaces for new learning styles, and promoting external networks and collaborations with the whole territory.
In this way, the centrality of the person and the openness to the territory find in the learning environment the suitable context for organizing knowledge and for being at school well, with the aim of reconnecting the knowledge of the school and the knowledge of the knowledge society.
It also aims to prepare experiences that can encourage inclusion, interculture, the enhancement of differences, the sense of citizenship, to meet the needs of basic training that makes all pupils able to understand and elaborate the multitude of information and messages to which, regardless of the social or cultural condition they are subjected.
Including pupils with Special Educational Needs, means making sure that they are an integral part of the school, social, cultural context, on a par with the other pupils, together with the other pupils, without any discrimination; it means ensuring everyone's right to educational and training success.
It is in this perspective that the harvest and wine making project fits.
The full-time timetable of our school path allows you to take full advantage of these opportunities for collaboration with the local area, for a school that starts from knowing how to get to learn to learn.

LINK TO THE NATIONAL CURRICULUM

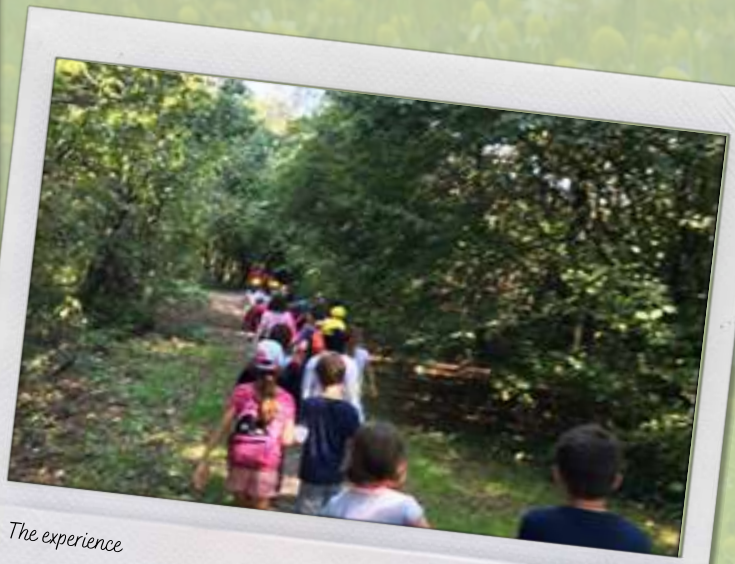
The integration of disciplines to explain the complexity of reality, the construction of knowledge and skills through the analysis of problems and the management of complex situations, cooperation and social learning, experimentation, investigation, contextualization in the experience, laboratory skills, are all essential factors for developing skills, stable and meaningful learning, with meaning and value for citizenship.

EVALUATION TOOLS USED

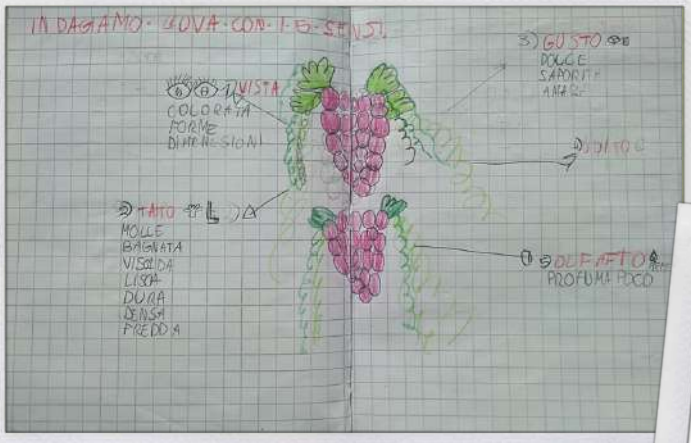
Knowledge surveys; Teacher observation; Class discussions; Tests; Written reports

DOCUMENTATION COLLECTED

squeezing grapes



The experience



Science - five senses

Telling the experiences

Italian - phases
Telling an experience starting from WH questions

Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 2

When choosing the partner company for the project, the teachers opted for the association Asineria Aria Aperta, which has been collaborating with our school for years.
The teachers know the people at the head of the association and have a professional and human relationship of mutual respect, dialogue and trust. These same people will accompany the classes during the implementation of the project.
Based on the aforementioned premises, we opted for a shared path rather than a pre-established one, in order to be able to modify the types of intervention and the necessary actions during the implementation of the project. We will make the changes knowing that we will be interacting with people open to dialogue and flexible, who have a lot of experience, who are accustomed to working with children and teachers, and who know the reality of our school and our pupils.

2 LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 3

In the process of learning, our actions as teachers are always aimed at encouraging a co-construction process. The proposal of an activity usually represents, in its initial phase, an opportunity to share ideas through conversations and writing papers about the pupils' previous knowledge on the topics dealt with.

Each step of the winemaking activity was accompanied by conversations during which the children were elicited to ask questions, make observations, give original contributions and points of view.

The various activities related to the project, such as the making of grape pudding (a traditional product which is deeply linked to the history of the area in which we live), have provided the opportunity for the children to reflect on how to carry out a practical activity, make assumptions, verify them, and eventually how to use them in a real and concrete context.

3 INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 3

The holistic approach to knowledge and the interdisciplinary dimension are already taken into account at the project level.

We have therefore chosen a naturally structured activity according to an agroecological sustainability perspective: the association with which we have chosen to carry out the activity bases its work on the principle of acting in accordance with the rhythms of nature and the recovery of a slow dimension.

The vines from which harvested the grapes with the children is Ancellotta, a local variety which has been grown in this area for centuries according to methods consolidated by experience. One vine in particular is of a very ancient variety of Ancellotta, which until recently was believed to have disappeared and was recovered from the Asineria. The donkeys, animals historically used for transport during the harvest, accompanied the whole activity and were loaded by the children themselves with bunches of grapes they had harvested to be transported to the crushing site. Working together with donkeys lets the children establish a true relationship of collaboration and respect with them, in fact realizing pet therapy.

The reflection on the holistic approach to knowledge does not need to be stimulated as it is an intrinsic characteristic of the very nature of the activity, and we have confirmation of this in the learning gained by the children. The experience of the harvest served as a supplementary background for the various disciplines but the subsequent steps of the practice were not linked with the individual subjects.

4 ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 3

The assessment for learning was purely educational and we chose this type of experience because it was able to solicit the construction and acquisition of skills in a global way, stimulating the personal elaboration of meanings through interdisciplinary and experiential connections.

Collection of data about student's learning has been worked out through group discussions and open-ended questions before, during and after the activity.

Before the practice farmers had no part in it, while during the practice both farmers and teachers were involved in the learning process and collected qualitative data about learning, mainly through group discussion.

After the practice the pupils interviewed farmers about the process of winemaking, therefore they had to think individually about what they understood and what they didn't, and choose within group discussion the right questions for the interview.

Through this type of self-assessment, not only have the pupils put in place the progressive construction of their skills but also of their identity as a person engaged in the learning process.

5 INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 3

The reality of our classes is highly heterogeneous: there are disabled children and several children with special educational needs. The pupils are of different nationalities and origins and have extremely different cultural references.

The learning objectives have been devised considering the specificity of each individual pupil. When asked to answer, we took into account the ability to express themselves to the best, giving the possibility of using different means such as interventions during conversations, written texts, drawings, and audio or video files in order to contribute to the construction of common knowledge.

During the various activities, children often worked in small and large groups. The groups were structured according to the principles of cooperative learning and changed according to the context.

The criterion used most frequently in forming groups was the quality of the relationship between the individual components, unless the main objective of the activity itself was the facilitation of the relationship between children (such as grape crushing)

Peer tutoring is a practice rooted within the classes, therefore it is part of our daily way of working, as is alternating different teaching styles depending on the context, and the educational and learning objectives to be pursued.

6

FEASIBILITY

Are organizational aspects coherent and adequate to the practice?

LEVEL 3

The experience of the grape harvest took place in an absolutely ideal environment, which gave the children the opportunity to harvest and crush the grapes using traditional tools and have a very active part in first person. As for the parts carried out at school, we made sure to continue in this direction.

Before the Covid-19 pandemic, we worked by adapting school times and spaces to the development of the practice, in a perspective of a comparison with the farmers, the observations of the children, and the dialogue within the team.

The restrictions imposed by the pandemic made it mandatory to modify times, spaces and materials, and to make our professional resources available by developing this part of the project through web channels, replacing face-to-face work with mediated communication.

The media made it possible to maintain a dialogue between all the people involved in the project, by sending videos, materials via the web, and video chat, thus representing an opportunity to learn the use of such tools and experiment with new ways of communicating, ensuring that learning was consolidated and developed deeper.

TASTED

SCHOOL: Colégio do Sardão
COUNTRY: Portugal
GRADE: 3rd grade
CHILDREN AGE: 8 and 9 years old
TEACHERS: Paulo Silva, Joana Guimarães, Hugo Sousa, Sara Linhares, Virginia Figueiredo
TESTING PERIOD: November 2019

LEARNING OUTCOMES

Promotes a holistic perspective through the following subjects: CLIL- Content and language integrated learning To identify phenomena related to some of the vital functions: digestion (feeling hungry);circulation (heartbeat, bleeding…); breathing (breathing movements, shortness of breath…).To know some organs (mouth, stomach, intestines, heart, lungs, kidneys, genitals): and to locate these organs in representations of the human body.To recognize pleasant and unpleasant situations and different reaction possibilities (heat, cold, hunger, comfort, pain…).To recognize psychic states and their physical reactions (joy / laughter, sadness / crying, fear /tension…).To recognize some feelings (love, friendship…) and their manifestations (affection, tenderness, anger ….).Create conditions for the student to understand the importance of a diversified diet; Make known and taste various foods through sensory experiences.Define healthy eating as being balanced and diverse.Encourage the consumption of fruits and vegetables;Understand a food pyramid and what it looks like composed;Highlight good nutrition and body practice as aspects essential to good health.

LINK TO THE NATIONAL CURRICULUM

This is all linked to the national curriculum, nevertheless we have at school autonomy to promote different methodologies and also activities.

- Describes natural and human elements of the place where you live.
- Communicates knowledge about places, regions and events.
- Knows how to put questions, raise hypotheses, make inferences, prove results and knows how to communicate, recognizing how knowledge is built.
- Can ask questions about environmental problems in the locality where they live, namely related to water, energy, waste, air, soil and proposals for intervention.
- Expresses attitudes of respect, solidarity, cooperation, responsibility in relation to those who are close to it.
- Demonstrates positive attitudes conducive to the preservation of the surrounding environment, being able to present proposals for intervention.

EVALUATION TOOLS USED

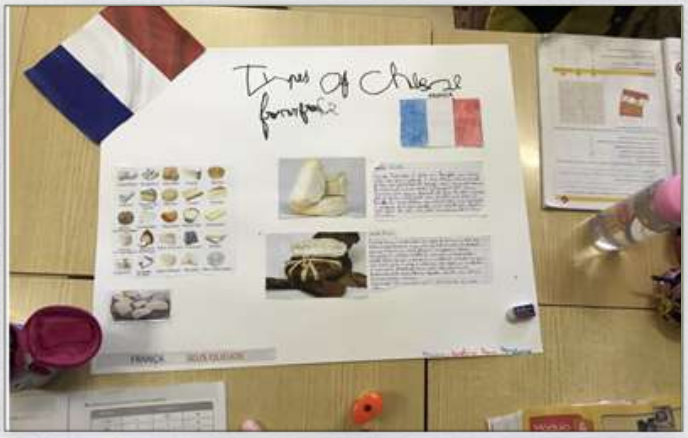
- Problem solving in groups, conversation and communication between all the partners involved in the activity (teachers, students, farmer and board of the school)
- Self-regulation learning grids.

DOCUMENTATION COLLECTED

Say Cheese activity - cheese making & recipe, with CLIL approach in English

Griglia TastEd dopo aver assaggiato ciascuno dei diversi tipi di formaggio

Research activity and group work about cheeses of different countries, with CLIL approach in English



Research activity and group work about cheeses of different countries, with CLIL approach in English

Research activity and group work about cheeses of different countries, with CLIL approach in English

TestED grid

Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?
LEVEL 1
In this activity the teachers have planned independently.

2

LEARNING CONSTRUCTION

How is learning promoted and made visible to students?
LEVEL 2
In this activity students were previously asked to research about different types of cheeses, and then they had to present it to the class.

3

INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?
LEVEL 2
This activity did not integrate a holistic perspective.

4

ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?
LEVEL 2
It was done by free oral presentations, followed by questioning by the class; schematic presentation of the information, with the support of the teacher.

5

INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 2

Anyone can participate and everyone can join

6

FEASIBILITY

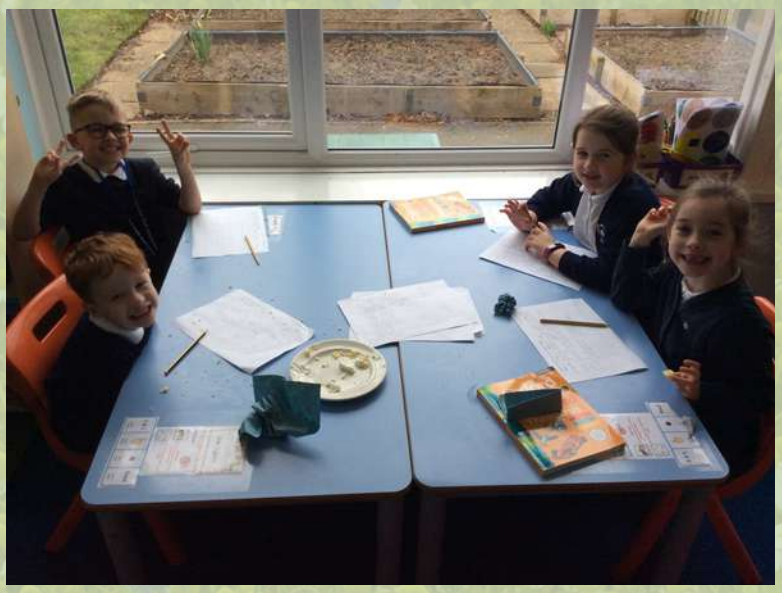
Are organizational aspects coherent and adequate to the practice?

LEVEL 2

High feasibility

CHEESE MAKING

SCHOOL: Washingborough Academy
COUNTRY: United Kingdom
CHILDREN AVERAGE: Age 6-7 and 7-9
TEACHERS: Catherine Taylor and Kelly Robinson
TESTING PERIOD: November 2019 to February 2020



LEARNING OUTCOMES

SCIENCE
- To describe the physical changes that happen within cheese making
- To use our senses to describe different types of cheese
- To discuss and explain how the cheese felt/smelt/sounded/looked/tasted

LITERACY
- To use an adjective to create an expanded noun phrase to describe the cheese
- To describe the process of making cheese in chronological order

MATHS
- To measure mass and capacity accurately when making cheese

GEOGRAPHY
- To identify the countries where different cheeses come from

LINK TO THE NATIONAL CURRICULUM

Science

- To say which part of the body is associated with each sense
- To describe the simple physical properties of a variety of everyday materials
- To using their observations and ideas to suggest answers to questions

Literacy

- To use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas
- To learn how to use: expanded noun phrases to describe and specify [for example, the blue butterfly]

Maths

- To choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- To sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]

Cooking and nutrition

- To understand where food comes from
- Geography
- To use world maps, atlases and globes to identify the United Kingdom and its countries, as well as the countries, continents and oceans studied at this key stage

EVALUATION TOOLS USED

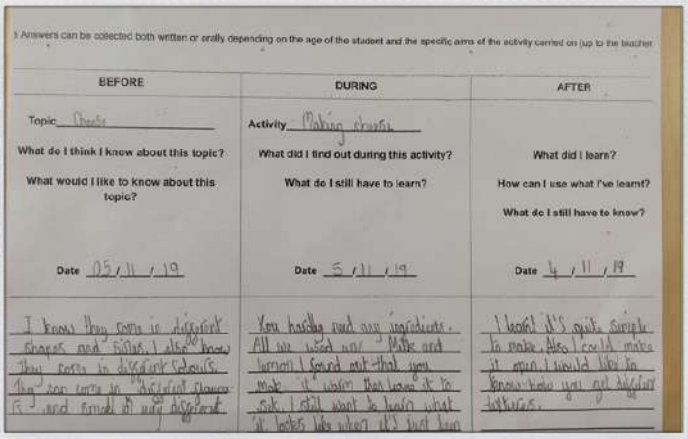
- KWL grid
- Video of children's responses
- Senses work

DOCUMENTATION COLLECTED

- Year Two made a soft cheese using milk and lemon juice.

Using our senses to explore the different cheese types for creating our riddles.

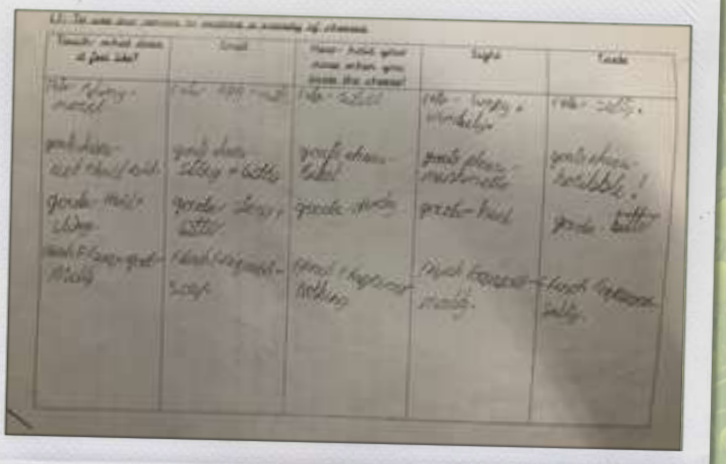
Mulberry class facetiming a dairy farmer- this enhanced our knowledge of how cheese is made.



Answers can be collected both written or orally depending on the age of the student and the specific aims of the activity carried on (up to the teacher)

BEFORE	DURING	AFTER
Topic Cheese	Activity Making cheese	
What do I think I know about this topic? What would I like to know about this topic?	What did I find out during this activity? What do I still have to learn?	What did I learn? How can I use what I've learnt? What do I still have to know?
Date 05/11/19	Date 5/11/19	Date 4/11/19
I know they come in different shapes and sizes. I also know they come in different colours. They can come in different flavours and smell all very different.	You had to add any ingredients. All we used was Milk and lemon. I found out that you make it warm then leave it to set. I still want to learn what it looks like when it's just been	I learnt it's quite simple to make. Also I could make it again. I would like to know how you get different textures.

An example of the children's work: what they knew before, during and after the preparation of the cheese.



We used all our senses to explore the varieties of cheese available. . Many of the children had not tried any other kind of cheese apart from cheddar.

Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 3

The teacher and dairy farmer discussed the aims of the learning prior to the Farmer Time call. The farmer asked the children questions regarding their current knowledge on milk production and explained the process to them taking this into account. The farmer emailed later answering one of the questions that she hadn't known the answer to in the call. Children have gone on to explain their learning to their regular Farmer Time farmer and on the video produced of the day. This was beneficial as it allowed the children to gain first hand experience of milk farming, they could ask questions and see the process visually.

2

LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 2

The children completed KWL grids to identify their previous knowledge, what they learned during and after the cheese making process. These were referred to and filled in throughout the day to give the children an active role in their learning and allow them to ask questions. The next steps for this would be to give them problem-based activities relating to the cheese making that they could carry out independently so we can achieve Level 3.

3

INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 3

The children used the skills from TastEd lessons to explore different cheeses with their senses and make observations of the cheese making process. They also used FarmerTime contacts to learn more about the cheese making process. The children combined these skills within a 'Cheese Day' and could discuss the connection between them.

4 ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 3

The children completed a KWL grid to track their learning throughout the day and added to this when they needed to. There was also open and closed questioning to assess knowledge, and the children discussed their learning on the video. Next steps in this area would be to for the children to self-evaluate the learning process, considering how they have learned and what would help them individually. They could also create a piece of work to share their knowledge after.

5 INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 3

A range of teaching styles (including, practical, written, drawing, discussion) were used to support all children. Children worked in mixed ability groups to enable the pupils to scaffold each other's learning. Discussion was an intrinsic teaching and assessment tool for all of the activities.

6 FEASIBILITY

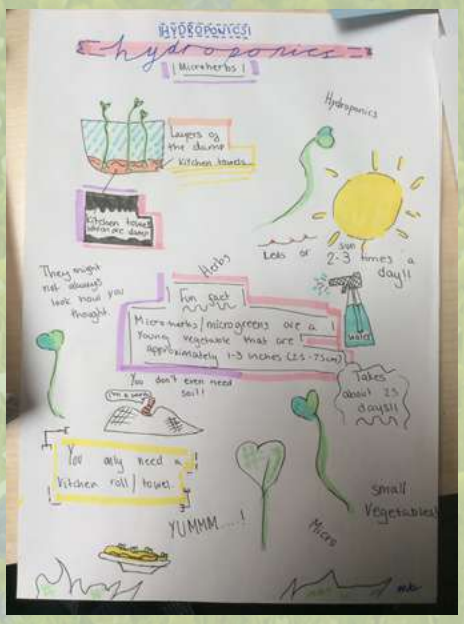
Are organizational aspects coherent and adequate to the practice?

LEVEL 2

Making the soft cheese was straight forward and did not take much time. The resources were adequate, however the task could not easily be broken down to allow all children to have a go at each step. The hard cheese also took several days and did not work as it did not curdle properly

TASTED AND MATHS ON A FARM

SCHOOL: Washingborough Academy
COUNTRY: United Kingdom
CHILDREN AGE: 6 to 11
TEACHERS: Louise Foster, Beth Street and Katie Cropper
TESTING PERIOD: April 2021 to June 2021



LEARNING OUTCOMES

SCIENCE

- To describe the importance for humans to get the right nutrition from what they eat
- To recognise the impact of diet, exercise and lifestyle on the way their bodies function
- To plant our own crops (micro herbs) and ensure that they have the essentials to grow

PHSE

- To co-operate with others
- To encourage children to eat more fresh food, improving health and well-being

LITERACY

- To use appropriate language to make predictions, record observations and discuss results/conclusions
- To use high quality vocabulary to describe senses (taste, smell, sight, touch, hear) and compare different micro herbs

MATHS

- Measure and record the height of the micro herbs
- Measure and record the amount of water used
- Interpret and construct block diagram (KS1), bar chart (LKS2) and line graph (UKS2) to show the height of the herbs over time
- Look at the data and make comparisons from the graphs regarding growth and taste

GEOGRAPHY

- To identify and locate the countries on a map of the world and Europe
- To identify and locate the capital cities of the countries

EVALUATION TOOLS USED

- First impressions card
- Post-it notes during the sessions
- Recorded table of their senses
- Photos
- Video of the children's answers
- Final considerations card

DOCUMENTATION COLLECTED

We used Smart notebook to plan all of the sessions which were visually followed by the children. Video observations of the children tasting micro herbs, children's work, group discussion notes, post-it's, first and final thoughts questionnaires and hearing the children's voice in other lessons.

KS1 drew images of what they thought a farmer looked like and what hydroponics was.

We also put our geography skills to the test to locate the other countries taking part in this project.

We then learnt about the hydroponics farms in London, underground.

Planting the seeds

KS1 children working in groups to compare traditional farming to hydroponic farming.

Radish Sangria

UKS2 Senses sheet

Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 3

Teachers and farmers have worked in collaboration to organise most aspects of the children's learning. At the start of the project we contacted our class farmers who supplied us with videos and informative information about life on their farms. This then helped the teachers to set the foundations for learning and tailor this in relation to the pathways, as well as enhancing what is already accessible from the school's provision of food education. We looked at the children's previous experiences and thought about how the pandemic may have affected them. Taking these factors into consideration we wanted to ensure children entering back into the school environment could access learning with a more hands on approach, as well as learn about some of the latest advances in farming. We liaised bi - weekly with our farmers, to find out their opinions about growth of crops and how to best look after them. We discussed the aims of the learning prior to the recorded FarmerTime call. Each class also had their regular FarmerTime call with their class Farmer where the farmer asked the children questions regarding their current knowledge on hydroponics and traditional farming. They also set us some challenges to help them on the farm. This has then helped us to tailor the learning in relation to the pathways as well as enhancing the school's provision for food education.

2

LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 2

Learning within Washingborough Academy has been promoted by using visual, auditory and kinesthetic tools to ensure that every learner has been able to participate and had a positive and enjoyable experience. The children were given the opportunity to evaluate what farmers do as part of their jobs and to compare crop farming and hydroponic farming. As a result, the children were asked to compare which type of farming they prefer and to give reasons to support their thinking. Throughout the practice the children have been able to ask and answer questions starting from the first impression lesson, throughout several TastEd sessions and during the final thoughts lesson. The children have been made to feel that their comments, curiosities and opinions are always valid. Plus, the children have had time to reflect upon each stage of the practice and to share their understanding with their peers. UKS2 children created posters about hydroponics at home too as part of their Blue Peter Green Badge challenge. They explained what hydroponics was and how it can help our environment.

3

INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 3

The children used the skills from TastEd lessons to explore the micro herbs that they had grown in their classroom. They used all of their senses and made observations of the hydroponic process. They also used their FarmerTime to learn more about traditional farming. The children then went home and set up their own hydroponic trays using items at home e.g. Tupperware box and kitchen roll. In the media, there is more coverage of hydroponic farming which the children have then linked to our sustainability projects and thought about how we can make a difference. Over the last few weeks, our TastED lessons have not only enabled our children to have a greater understanding of where food comes from, but also have exposure to the different textures, smells and tastes associated with a variety of micro- herbs and vegetables. It was wonderful to hear the children's feedback and the comparisons they were making when we were making corn frizzlers. We grew coriander as a micro-herb and many could taste this within the sweetcorn dish; commenting on how different it tastes when blended with other ingredients as oppose to on its own. Children were also discussing how the taste would change if we substituted the herb for lemon-basil (another herb we have grown). The exposure to different foods that they may not get to experience away from school has been invaluable for each of them and the knowledge they now possess enables them to have really in-depth discussions when we are cooking and tasting different dishes.

4

ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 3

The children started the practice by giving their first impressions of farmers and considering what hydroponics could be without any prior learning. After this task, the children were made aware of the nature of hydroponics farming and were asked to compare this type of farming with crop/animal farming. From this point, the children were continuously part of evaluating and reflecting on their learning through group discussions, written comments, farmers videos, planting and monitoring the growth of various micro herbs, using their senses to taste their grown micro herbs and by finally completing a 'final thoughts' questionnaire. The children were asked to think about how they could use their hydroponic learning in the future and to ask any further questions. Children also compared the growth of the micro herbs by analysing the amount of water each micro herb needed and presenting this information on graphs.

5

INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 3

Throughout this process, we have used a range teaching styles (including: practical, written, drawing, discussion, paired work, class work) were used to support all of the children. They also worked in mixed ability groups to enable all pupils to showcase their knowledge. During the written task, children were able to record in different ways to support those children who find writing difficult. All of the children enjoyed sharing their ideas about the herbs, by using their senses to describe each of them. Discussions as a class and with their talk partner were vital to enable the children to show their learning and be used as an assessment tool for all of the lessons. The teachers worked collaboratively in providing a plan of learning which would allow the children to understand how to grow micro-herbs without the use of soil (hydroponics). All of the teachers were able to share their teaching experiences and give advice about each lesson. Lessons were adapted by Key Stages.

6

FEASIBILITY

Are organizational aspects coherent and adequate to the practice?

LEVEL 3

During the practice, we felt that we had sufficient time, space and materials to develop the children's awareness of a different type of farming called hydroponics. Over a seven-week period the children took part in a lesson a week to first develop their understanding of hydroponics, secondly to practically grow micro herbs, thirdly to use their senses in TastEd sessions to eat their grown micro herbs and finally to create graphs to show the herbs journey linked to maths. All of these sessions were carried out in the normal day to day running of the classroom. We had the necessary materials and resources to gain these experiences for the children in a successful manner. As a school, we are now going to further develop the growth and use of hydroponics within our school grounds and we are going to also set up an aeroponic system on one of our playgrounds to grow food for our school kitchen.

FACETIME A FARMER

SCHOOL: Agrinfanzia Ratti Welcher, Milano
COUNTRY: Italy
CHILDREN AGE: 3 to 6
TEACHERS: Maialetti Laura, Albanesi Chiara
TESTING PERIOD: March 2021 to June 2021

LEARNING OUTCOMES

- Observation of plants and food products grown in the garden
- Observation of seasonal changes related to planting processes
- Reasoning about the planting process and what particular conditions favour the birth and growth of plants.
- Increasing sensitivity towards the natural environment, through constant "taking care" of the school garden, but also by paying attention not to damage the environment during free play time in the garden (not killing insects, not tearing flowers or plants)
- Understand the importance of diversifying in nutrition through observation of the seasonal school diet and classroom games.
- Understand where the food eaten comes from (transformation from soil to food), linking it to the concrete experience of harvesting ripe crops.

LINK TO THE NATIONAL CURRICULUM

From the "National indications for the curricula of pre-school and primary school first cycle of education' (2012)

KNOWLEDGE OF THE WORLD

The child groups and sorts objects and materials according to different criteria, identifies some properties, compares and evaluates quantities; uses symbols to record them; takes measurements using instruments within his/her reach.

Observes with attention his/her body, living organisms and their environments, natural phenomena, noticing their changes.

Knows how to place daily actions in the time of day and week.

SPEECH AND WORDS

The child knows how to express and communicate to others emotions, feelings, arguments through verbal language that he/she uses in different communicative situations.

THE SELF AND THE OTHER

The child plays constructively and creatively with others, knows how to argue, confront, and support his/her own reasons with adults and children.

Knows that he/she has a personal and family history, knows the traditions of the family, the community and compares them with others.

Reflects, compares, discusses with adults and other children and begins to recognize the reciprocity of attention between speaker and listener.

Orient themselves in the first generalizations of past, present, and future and move with increasing confidence and autonomy in familiar spaces.

EVALUATION TOOLS USED

- Direct observation of the child linked both to the performance of the proposed activity and to the relationship established with the farmer.
- Final game activities to assess the level of knowledge reached by the children.

DOCUMENTATION COLLECTED

1st activity: a shopping themed game was proposed to show the importance of a varied diet..

2nd activity: construction of the food pyramid through the collage technique

3rd activity: Reasoning about the proposed school diet to understand why it varies by season

final game to assess understanding of the seasonal differences of the products we planted in the garden.

Indicators

1

SCHOOL / FARM COLLABORATION

Do teachers and farmers co-participate in the design of the practice?

LEVEL 2

The farmer started working for the school during the month of February 2021. Initially, he only worked on the garden and the vegetable garden, later he was involved by the team of teachers to work with them and the children in small groups in the garden.

Not being an educational figure, the farmer needed time to establish a relationship with the children and to establish a collaboration with the teachers that would lead to educational goals. As time went by, the farmer became more and more willing to follow the children in the garden activities, while using the teachers' support on the more educational side. This collaboration has proved to be advantageous because it has allowed the children to have a concrete experience of continuity and to feel that they are the protagonists in looking after the school garden.

2

LEARNING CONSTRUCTION

How is learning promoted and made visible to students?

LEVEL 3

Initially, the children in the class, divided into two groups (by age group), were asked to brainstorm to find out what they knew at that time about the garden, the work of the farmer and the food that comes from the land. We began to get acquainted with Antonio, the farmer, who worked at our school almost every day, and we managed to find one morning a week with him where we took care of our vegetable garden continuously, following his instructions. The activities planned with Antonio were preparing the soil, sowing seeds, watering the plants (once a week for each section) and harvesting the ripe fruit. In the meantime, the children were asked to observe the changes, and to reflect on why they were taking place.

In the classroom, a food-related path was proposed, with activities enabling the children to understand where food comes from. In addition, the question of why a certain type of diet (provided by a nutritionist) was proposed at school was raised, which enabled some children to experience lunchtime more consciously. During this period of experimentation, the children acquired knowledge about the seasonality of products and consequently knowledge about seasonal differences, became more aware of the origin of the food they eat and came to the conclusion that it is not born in supermarkets, but is the fruit of agricultural work.

3

INTERDISCIPLINARY DIMENSION

Does the practice promote an interdisciplinary and systemic perspective on farming?

LEVEL 2

The activities were designed in order to cover different fields of experience and different topics. The continuous experimentation of working with the soil allowed the children to have a concrete reference and answer to the hypotheses reasoned with them before the activities.

4

ASSESSMENT FOR LEARNING AND SELF-ASSESSMENT

How is students' evaluation and self-evaluation realized?

LEVEL 3

The evaluation was carried out in itinere by the teachers by asking questions during the activities aimed at assessing the understanding of the section. Through photographic documentation and transcripts of conversations we were able to keep track of what we covered and reflect later on the development of the practice.

5

INCLUSIVENESS

Is group diversity supported as a learning resource?

LEVEL 3

During the activities each child contributed with his or her experiences and pre-knowledge and participated actively. The diversity of interventions was welcomed and contributed to the enrichment of the activities.

6

FEASIBILITY

Are organizational aspects coherent and adequate to the practice?

LEVEL 3

The space available in the school ensured an adequate application of the practice in the context. The "distance" mode characteristic of the practice was modified by making it in presence. This was done, both because of the constant presence of the farmer in the school, and also because, thinking of the pre-school context, direct contact guarantees less dispersion and less attention from the children.

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