



Curriculum Materials

Learning Journey

Ema and her food preferences



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Ema and her food preferences

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Background

- ❖ Urban setting
 - ❖ 27 children in the class
 - ❖ Children age 4-5
- ❖ Children come from families different in terms of structure and social context. All of them are native Romanian speakers.
- ❖ The school is committed to a unique and holistic multidisciplinary approach (care, nutrition, education). The teacher is an adult partner in play who knows all details of the play and the rules to be followed. Parents cannot be missing from this educational circle; they are the key partners in the children's education and the relations between family-kindergarten-community are decisive. Science lessons are very much valued by the school.



Links to CLS Framework

Synergies: Motivation and affect,
Dialogue and Collaboration,
Questioning and curiosity

Creative dispositions:

Motivation, Imagination,
Ability to work together, Develop
thinking skills, Sense of initiative

Learning activities: observing,
gathering evidence through
measuring, recording , explaining
evidence

My aims:

To motivate children to explore and
develop **thinking skills**

To increase children's ability to **work in
groups and share ideas**

To enhance children's ability to **ask
questions** and **take decisions** which
can be changed after observing and
experimenting

To explore how **teacher scaffolding and
involvement** can lead to a well
structured and guided lesson.

Setting the scene

Focus:

Encourage children to engage in **exploration/investigation**

Stimulate **collaboration** by **working in groups**

Increasing children's **curiosity** and **creative thinking** by **asking questions**

Rationale:

I wanted to motivate children to explore the natural world in a way as close as possible to the scientific inquiry. I noticed that they like to make observations and I used this to encourage them to formulate questions and make connections.

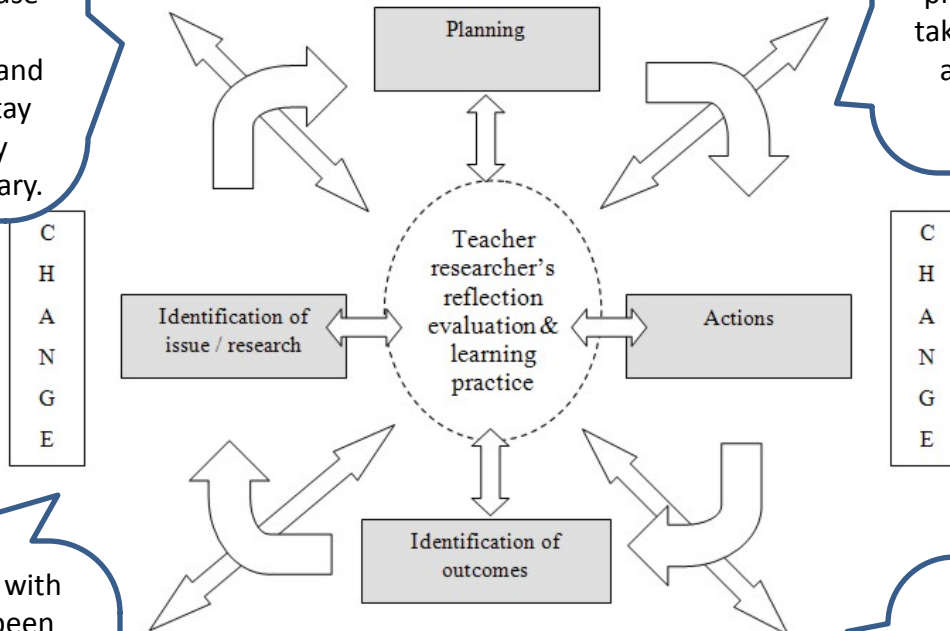
Implications for planning and teaching

- ❖ To provide an interesting subject for the investigation and the necessary resources to make them **curious** and stimulate their **thinking**.
- ❖ To provide opportunities for children to **ask questions, explore and take decisions** as a result of my **planning and designing investigations**.
- ❖ To promote children **motivation** in taking part to the scientific inquiry and **to talk and collaborate** for **gathering evidence and measuring**.

My Action Research Plan

Being aware of the need to foster creativity in science I decided to make some changes in my teaching and give children more freedom to act. I planned a science lesson for them to work in groups, to use the provided materials according to their decision, and give me the possibility to stay away and take action only when it is absolutely necessary.

My goal is to motivate children to carry out investigations, both in small groups and also with the whole class. I planned the activities and the resources to promote children's motivation in taking part in the scientific inquiry and to talk and collaborate for gathering evidence and measuring.



The results were discussed with the whole class and have been communicated to the parents. I also discussed with my colleague teachers about the inquiry activity and gave them some details about the role of the teacher. I planned another investigation which should lead to the development of new skills in the children.

The activity was performed, children collected their evidence, recording on their worksheets and I reflected on my teaching approach and children's learning. The results were very positive and encouraged me to implement new strategies for working with smaller groups.

Overview of science inquiry activity

- Telling a story – how to take care of Ema while Daria is away*
- Observing Ema (a small Guinea Pig) and her behaviour
- Suggesting some vegetables to feed her
- Investigating the most suitable food for her
- Drawing conclusions about results and
- Sharing with parents and other colleague teachers.

Developing the learning journey: Starting point

Starting point

The beginning of the activity was a story I told the children about Ema, a small Guinea Pig who is cared by Daria, my daughter. Daria will go to holiday and she wants to leave Ema to a very good friend together with all the instructions for taking care of her, including feeding. But we, the class, we do not know what is the best for Ema, in order for her to feel well and comfortable in another location.



Developing the learning journey 1: Initial questions, observations and explorations

Children are asking many questions as they do not have enough knowledge about such an animal and her behavior. Children discuss and through reflection and dialogue come up with their own opinions stating that for Ema to be happy during Daria's absence she needs to:

- be offered the food she prefers
- have a picture of Daria in her box
- play with her new host the same way as with Daria

What does she like to eat?



I was very happy to see children being involved in discussion that generates a lot of new questions.

How is Ema drinking?
When is she drinking?

Where does Ema sleep?
Where does she eat?

What is Ema doing when she has no food?



What kind of animal is this?
Is it a mouse?

It is not a mouse, it is bigger than a mouse...

I made different vegetables available to the children. This caused the children to put forward ideas based on their experiences of rodents, especially the similarities between the rabbit and the guinea pig.

I proposed an investigation in order to find out what Ema likes to eat and children chose two vegetables for the investigation: carrot and celery. What Ema will prefer? Children were very curious to explore.

Developing the learning journey 2: predictions

As in any other investigations, children made predictions regarding Ema's food preferences. Every child has his/her own stamp which can be easily recognized by each of them. On a worksheet which contains a table with the two vegetables offered to Ema (carrot and celery) children recorded their predictions by stamping in the chosen column.

The investigation took place for a duration of two days.

If she liked
carrot
yesterday
does not
mean that she
will like it
today again.

She will eat
more celery
today.

Ema will eat
more carrot.

I want to
stamp the
celery.



Developing the learning journey 3: predictions and measuring

The carrot is much more sweet than the celery. Ema will eat all of it.

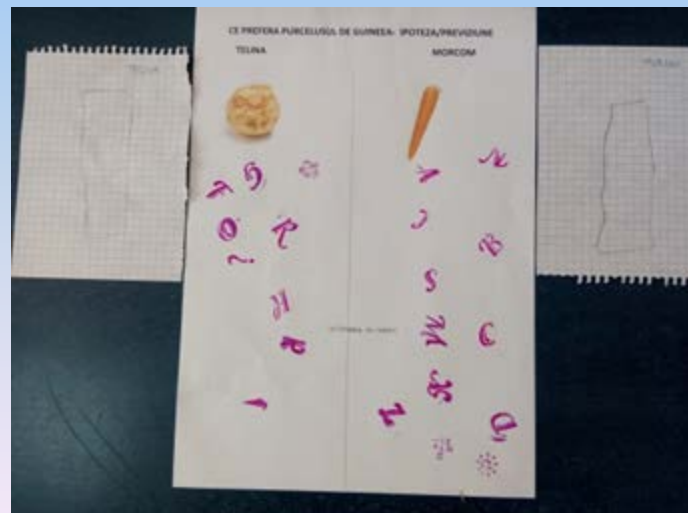


I try to draw the line very close to the celery slice.



Children thought at the beginning that Ema should like carrot more than celery. But how to measure this in a scientific way? With my help they started by offering Ema two almost identical slices of each vegetable.

Children draw the shape of each slice before starting the investigation

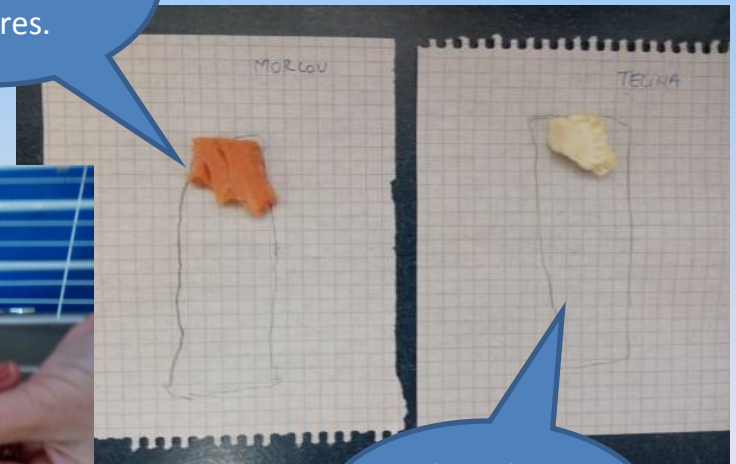


Developing the learning journey 4: investigating and measuring

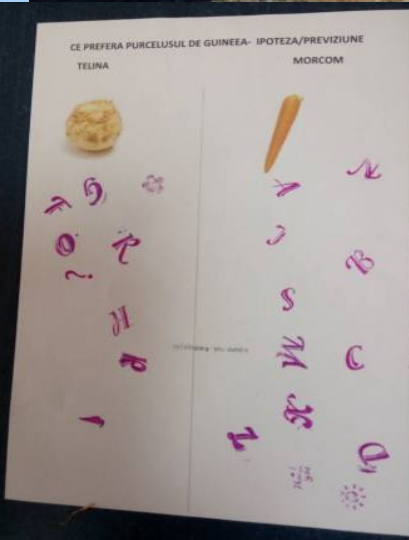


At the end of two days of investigation the results were obtained by comparing the remaining small pieces of carrot and celery with the initial shape of slices drawn by the children . Celery is what Ema prefers!

The carrot covers 13 squares.



The celery covers 9 squares.



Reflections

Children's progress

The children were motivated and involved in all stages of the activity trying to find solutions for the problem they faced.

The children asked many questions addressed to me and also to their peers, both at the beginning of activity (when the subject was introduced) and throughout the learning journey, prompted by observing the Guinea pig and its behavior.

The children were very curious to know more about an animal they had not met before.

I was very pleased to see their collaboration in proposing investigations to be followed to find out what to feed Ema.

Based on the results of the first day of Investigation (Ema ate more celery), many children changed the predictions they had made at the beginning.

Formative assessment throughout the activity was based on children's by questions and discussions.

Reflections

Unexpected results

The children proposed to extend the activity and investigate not only about the food that Ema prefers, but also about the environment where she lives: if she likes to have pictures in her cage or if she likes to listen to some music or to play with children.

The children were very happy about the lesson already performed and this gave me the courage to continue with inquiry activities about the surrounding world.



Reflections

Teacher's role

I encouraged children to ask questions and helped to formulate them. Observing the Guinea pig prompted the children to come up with questions concerning her habitat (Where is she living? In what country? In a forest?), her feeding (Does she like fruit or vegetables, or seeds?), her behavior (When is she sleeping? When is she looking for food?)

As the result of children's interest on the subject I looked for more information about Guinea pigs on the internet and showed children pictures and videos presenting various species, how they became domestic, how to care for pet Guinea pigs. We discussed all these in the second day of our investigations.

Dialogue and collaboration were very much developed during the inquiry activity.

My role was important in introducing ways to measure how much carrot or celery Ema is eating. I wanted to give children the opportunity to know about scientific measurements and not only to have a qualitative result at the end of the investigation.

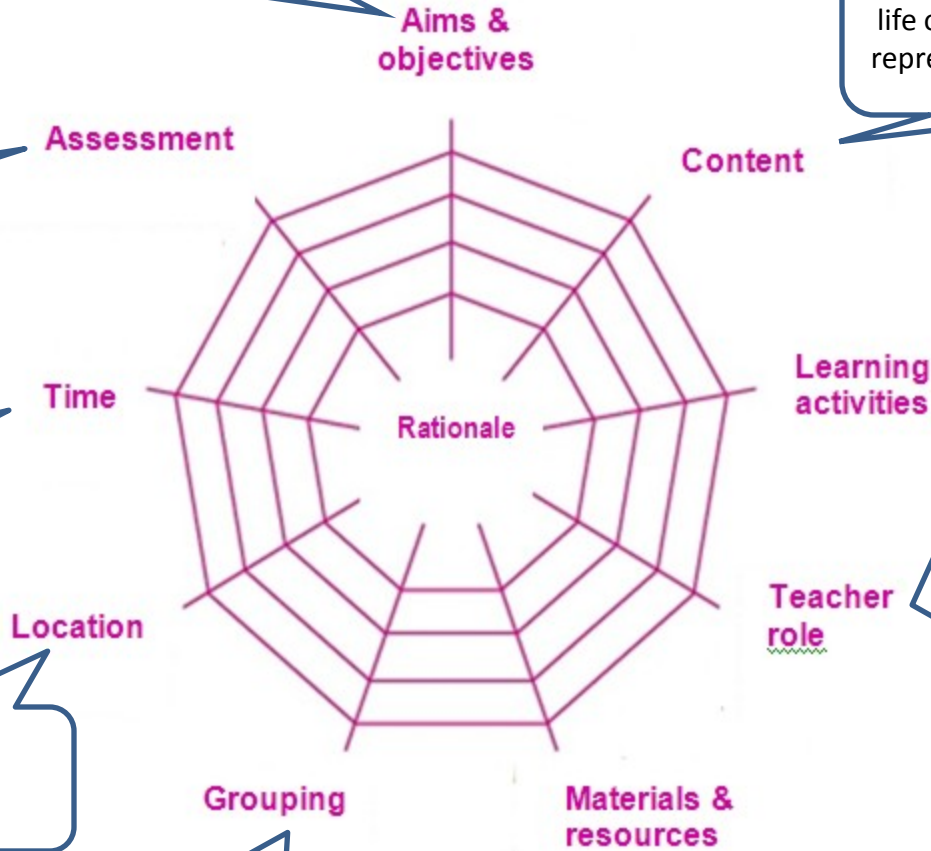
Future plan for investigation according to the spider web model (Van den Akker, 2007)

Objective: Develop creativity in the field of science by encouraging students to use their own ideas in conducting scientific investigation, encouraging children to formulate problems, ask questions, promote / stimulate classroom discussions, and evaluate different ideas.

Investigate different aspects of the life of animals and plants; graphical representation of experimental data

Formulate questions
Plan the investigation
Observing (gathering data)
Making connections

- Increase children's motivation and affect through play and story telling;
- Help children to formulate questions and foster their curiosity;
- Encourage dialogue and collaboration to support children's ideas;
- Promote reflection and reasoning;
- Offer guidance at the appropriate time.



The assessment was formative and has been done by me and also by the children.

The inquiry activity took place for a duration of 25 minutes in two consecutive days.

Our classroom.

Children work in groups guided by the teacher.

Vegetables, worksheets, stamps, pencils, paper

Thank you!



Reflection questions for the reader

How do you structure a science lesson using inquiry?

How do you make enough time for investigations during science lessons?

How do you challenge the children to take their own decisions during investigations?

In what ways can investigations lead to the development of children's creativity?



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www.ceys-project.eu



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