# STE(A)M - project

## " The water cycle "

## New Technologies – Robotics

## Unity - Natural Sciences/ " The water cycle ! "

One day when the weather was rainy, a student expressed his concern by saying: " What' s going on and it's raining " ? So we were given the opportunity to talk to the children about the « water cycle ». We read the fairy tale "  It fails, the drop fails  " by Sam Goduin and then a discussion started in the children's plenary. We uncovered their prior knowledge, learned new ones, and came up with what they want to know about how rain is made.

Beginning of the course

Our Schoolwall Board

The water cycle !

**Lesson/known object:** Natural Sciences/ "The water cycle!"

**Thematic unit:**   A1  Child and communication – Language
**Thematic subsection:** Comprehension and production of spoken texts
**Objective:** To learn about the water cycle

 **Activity:** We have to introduce the subject to our students, using videos, fairy tales or whatever else we want. We will try to detect the prior knowledge of our children on the subject. We read a book titled: " It fails, the drop fails " and the children painted their impressions. We saw videos:

**Knowledge:** To distinguish the different kinds oral texts (narratives, descriptions, reviews, announcements, instructions, references) (i)

**Skills:** To produce and retell texts (i)

**Positions:** To adopt a critical attitude towards information and opinions of others (i).

**https://www.youtube.com/watch?v=Vm6HthxtzPw**

https://www.youtube.com/watch?v=0F5ZQglK8OU
https://www.youtube.com/watch?v=HSGebGtBLAM

- A presentation with a video !

https://my.visme.co/view/kk076w33-6ep5dw9x1d9e2dz3#s1



**2nd  week**

**Thematic unit:**        Γ2   Natural Sciences
**Thematic subsection:**   ( ii) Physical state and changes of matter
**Objective:** To know the different properties of water through experiments. To express their concerns, to experiment with water, to make assumptions and to draw conclusions. **( Science)**
**Activity:** This week we did experiments with water, so that our students to learn the different properties of water, how they change and how this can be done. During the experiments, we gave the children the opportunity to make their own assumptions, to communicate and cooperate. They

also actively participated helping where needed in the experiments and they were very excited about the whole process.


**Knowledge :** Recognize that natural materials can be mixed, combined, heated, etc. and that they can be interfered with and modified their properties (ii)

**Skills :** To make findings for physical change of the materials and the factors leading to these changes (ii)

**Positions:** To identify the usefulness of the change of matter in daily life (ii)

# Coagulation

The water became ice and the children had fun making their own special frozen paintings

# Liquefaction



# Solubility



salt

sugar

water

# Water and oil



We color the water, pour oil into the bottle and mix it.

# Absorption

Ενεργοποιή

... after some time ...

# Objects that float and sink in water
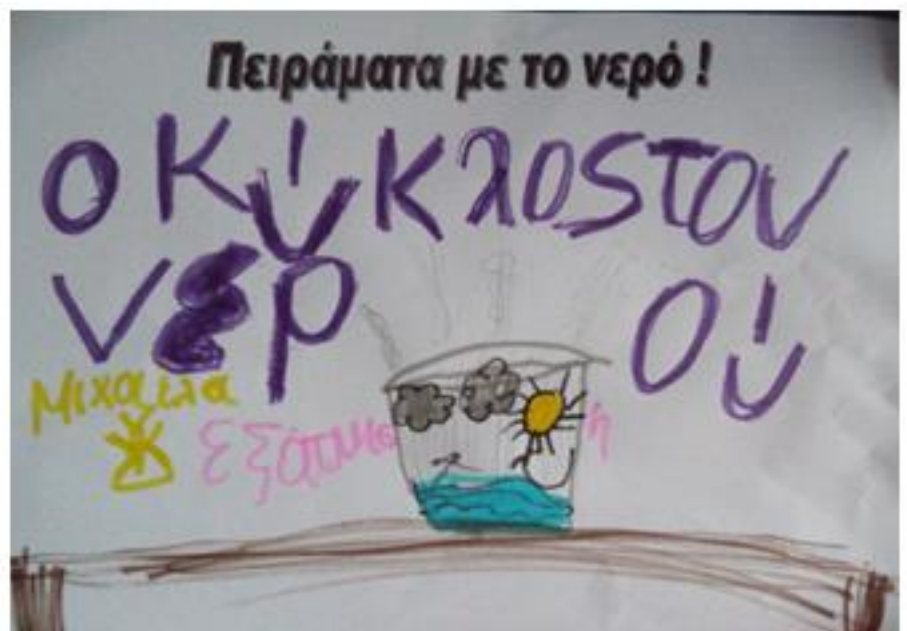


Pon pon



Sponges



Shells



Wooden bricks



Straws



cotton

Glue cap

# Children draw some of the experiments we did

Πειράματα με το νερό !
Ο κύκλος του νερού
Νικό...
ΕξατΜΙΣΗ



Πειράματα με το νερό !
15-2023 Σοφία
Πηγούνιον επίλονοτο κε Αο

Πειράματα με το νερό !



Πειράματα με το νερό !



Πειράματα με το νερό !

Πειράματα με το νερό !

ΕΠΙΠΛΕΟΝ ι νερό
στο Γιώργος ΜΠ
Τα σρουηγαράκια



Πειράματα με το νερό !

ΕΝΝΑΕΝΝΕΙΑ

Κ Καλαμακια



Πειράματα με το νερό !

κανει 3
3αχαρη
καδοσκς
νερό

- A  presentation with a book ( story jumper )
  https://www.storyjumper.com/book/read/157800191

**3nd  week**

**Thematic unit:**  Γ  Child and positive sciences

**Thematic subsection:**   (i) Concepts of space as a reference system

**Objective:** To communicate and collaborate with each other, enjoying the joy of team creativity. and become familiar with concepts such as: evaporation , concentration , liquefaction , condensation.

**Activity:**  This week the children learned about the process of the water cycle. They learned new words like (evaporation, liquefaction, concentration, condensation) and developed cooperation, communication and computational thinking skills. They experienced and acquired knowledge, through pleasant games, in which they actively participated.

**Knowledge:** To understand the relationships of proximity (near-far) and order or succession (front-back, up-down, etc.) on organized (e.g. squared floors) and unorganized environments (e.g. in yard or in the park)using different systems of reference (eg in relation to with the body or with others objects) (i)

**Skills:** To identify and describe different positions, addresses and routes to squared Environments (i)

**Positions:** To realize the importance of representations of space (and the use of maps) for finding of the optimal route (i)
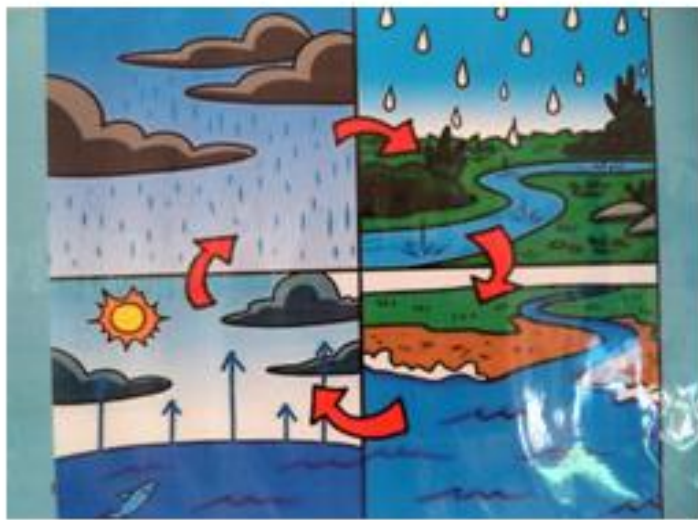
# Our surveillance material

# We observed what happens when water is heated ...


They touch the steam escaping upwards

The water evaporates

The kindergarten teacher explains to the children about the experiment they will do

THE WATER IS BOILING
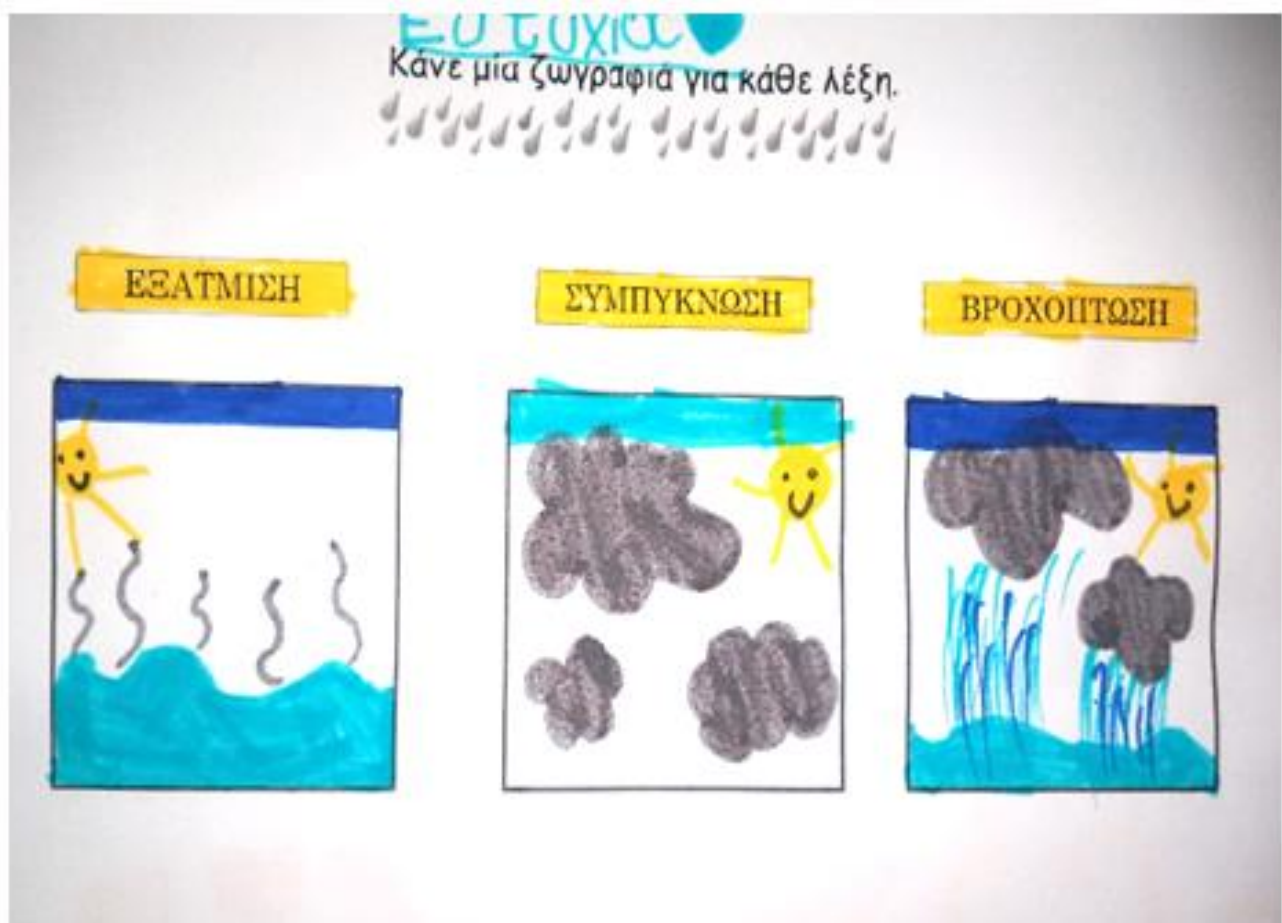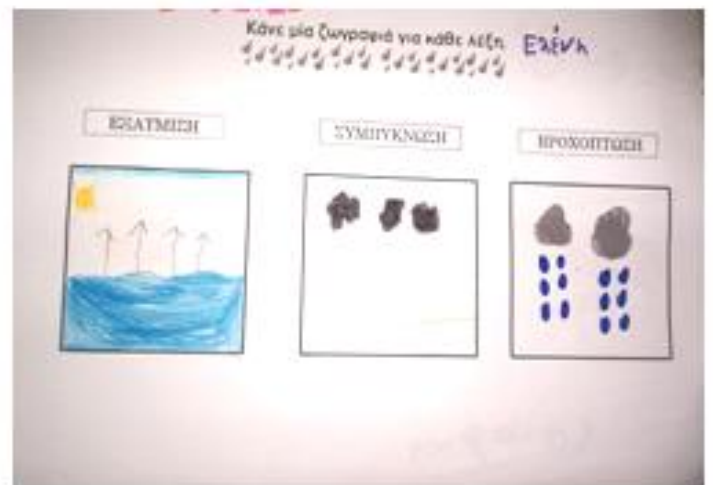
**1**

**2**

**3**

# Videos we saw

We played a game on the carpet where the children had to make the correct steps with the arrows, following the path of the water cycle !

After the experiential game on the carpet, our students, through their drawings, depicted the phases of evaporation, condensation and precipitation.
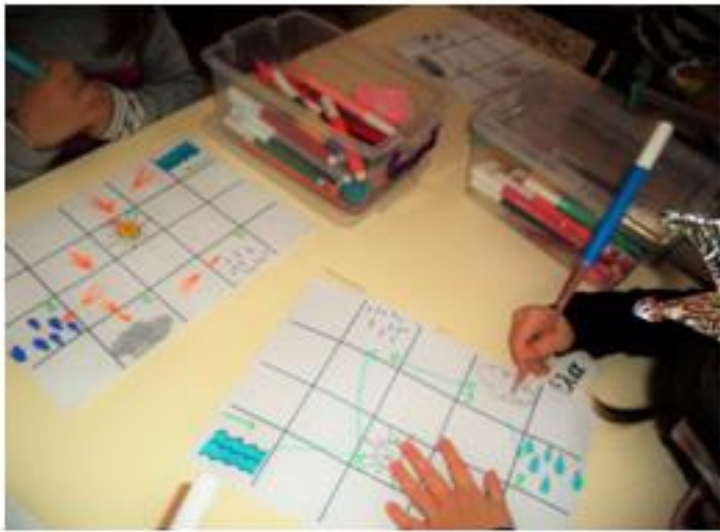
# Activity to develop
# and cultivate computational thinking

A presentation with a video

https://youtu.be/Jmk5G7wI_1s

**4<sup>th</sup> week**

**Thematic unit:** A2 Communication and Information Technologies

**Thematic subsection:** A.2.2 Discovery, programming and digital play

**Objective:** To use Technology and play digital educational games on the computer, related to the water cycle. **( Technology)**

**Activity:** This week the students played educational games, on the computer about the water cycle. They put pictures in the right order, showing the whole process, from evaporation to precipitation. They also tried to match words with pictures.

**Knowledge:** To recognize open source software and closed type in relation to the functions and how to use them (i) (ii)

**Skills:** To explore, to discover, to experiment with the appropriate use of open source software type (ii)

**Positions:** **T**o deal with ICT (Information and Communication Technologies）
as tools that enhance thinking and their abilities and not only as means fun and entertainment (ii)

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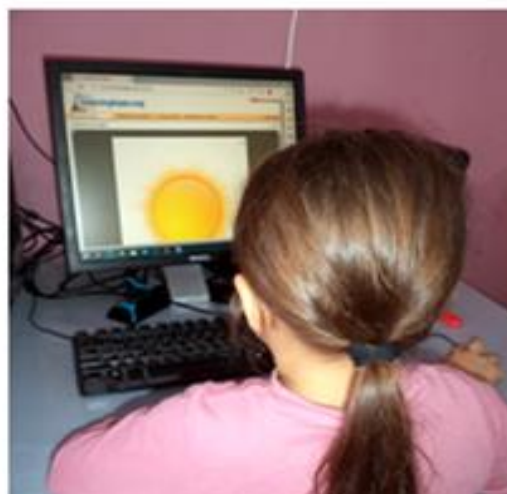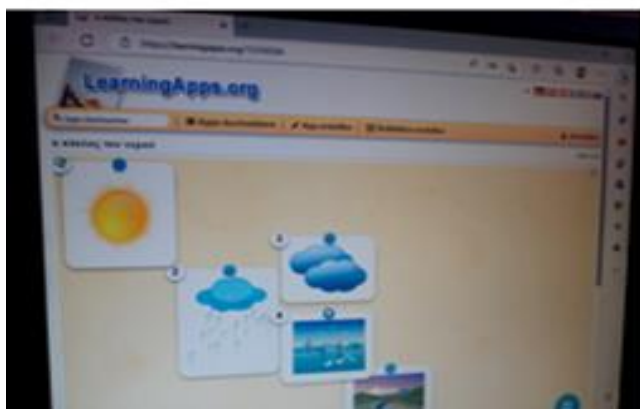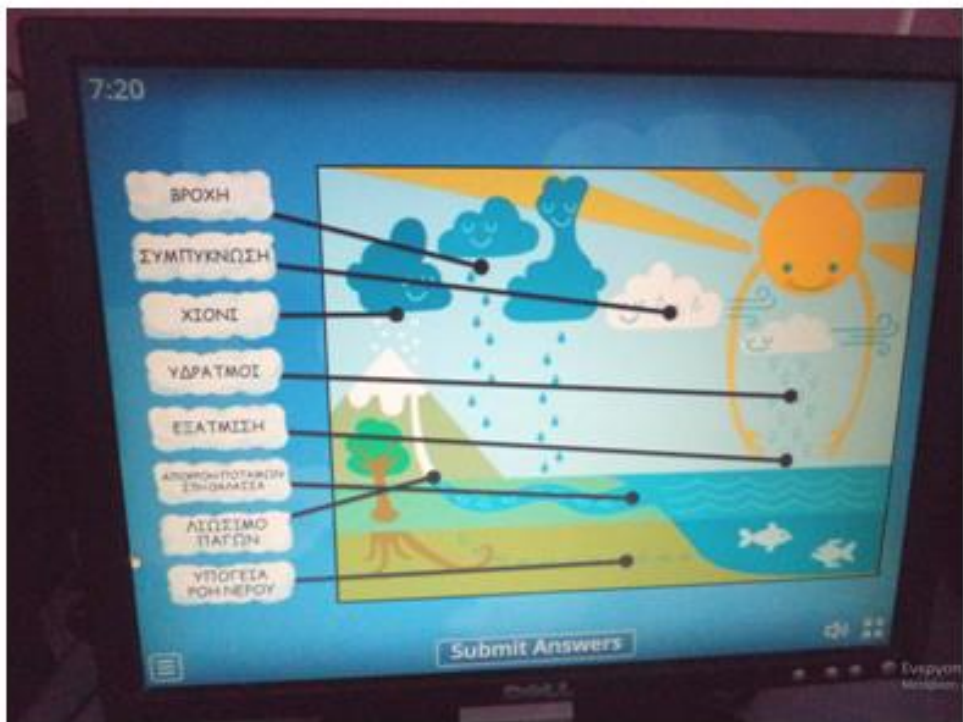
# 5th  week

**Thematic unit:**  Γ Child and Positive Sciences – Γ.1 Mathematics

**Thematic subsection:**  iv  Introduction to measurements

**Objective:**  To play with numbers and count the drops ( Mathematics)

**Activity:** In the fifth activity through Mathematics, the children can use  and practice their skills, through various games in the plenary. For example counting objects, matching, grouping or anything else you can think of, always related to Mathematics.

**Knowledge:** To Realize that the numerical result of measurement depends on the unit of measurement (if change unit, I will change the number result) (iv)

**Skills:** To count with repeated use of it unit (iv)

**Positions:** To appreciate the importance of measurements in issues and  problems everyday life (e.g. for the organization of space) (iv)

## 6th  week

**Thematic unit:**   Δ.  Child, body, creations and expression – Δ.2  Arts

**Thematic subsection:**  Δ.2.1  Virtual Arts

**Objective:**  To make original constructions, where water will be a key element (Engineering)

**Activity:**  In the sixth activity we would like every school to present a construction that the students will create, where water will be the key element.

**Knowledge:** To recognize the importance of all senses for the composition of an artistic work creation (i)

**Skills:** To compose original works by combining materials in a creative way (i)

**Positions:**  To cooperate for the creating one artwork ( i)

**7th  week**

**Thematic unit:** Δ. Child, body, creations and expression - Δ.2 Arts

**Thematic subsection:** (i)  Theatrical  expression and interaction

**Objective:** To express themselves creatively through Art **( Art)**

**Activity:** Dramatization and theatrical play are forms of art that we often use in kindergarten. Through them, we give our students the opportunity to express themselves freely, to unlock their emotions and at the same time to interact happily with each other.

**Knowledge:**  To recognize body, movement, face and voice as theater media expression, communication and creation meanings (i)

**Skills:** To discover and process the possibilities of expression which gives them their body (i)
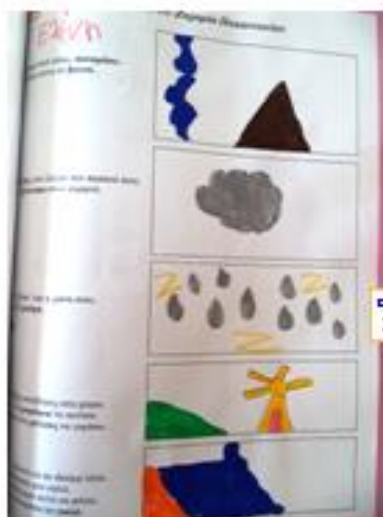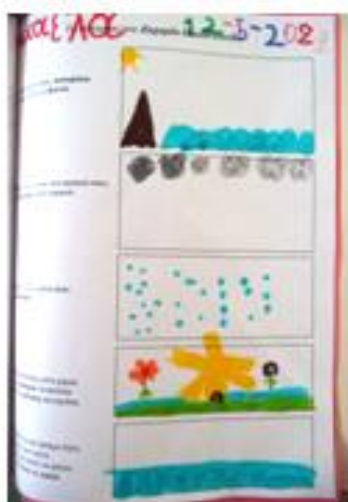
**Positions:** To participate in the group and coordinate the movement and expression in the context of the theater game (i)

We also read to the children **a poem** by Zacharias Papantoniou, entitled the little stream. Then the children drew it.





«Από πού'σαι, ποταμάκι;»

- Where are you from little river?
- From that mountain.
- What is your grandfather's name?
- Cloud in the sky.
- And who is your mom?
- The storm.
- How did you get down to the country?
- The fields to water and the mills to turn.
- Wait, let's see you a little, my good little river.
- I'm in a great hurry to leave, to meet the sea.

**8<sup>th</sup> week**

**Thematic unit:**   A.2 Information and Communication Technologies (ICT)

**Thematic subsection:**  A.2.2 Discovery, Programming and Digital Game

**Objective:**   To develop their computational thinking, using **Beebot. ( Robotics)**

**Activity:** First the children processed the Beebot robot, to learn its function. They also used the arrows, which helped them  learn to steer it (forward, right. Left. Back)

**Knowledge:** To distinguish them basic commands programming, programmable games (e.g. movement orders front-back left-right) (iii)

**Skills:**  **To** use basic programming commands (eg forward-backward left-right movement commands) (iii)

**Positions:** To appreciate and utilize the different way of thinking that they offer the environments programming (iv

Then with the help of the kindergarten teacher, the students gave the commands to the robot to make the path of the water cycle. This activity took place both down on the carpet and on the painted canvas with the water cycle.

ΒΙΝΤΕΟ ΔΡΑΣΤΗΡΙΟΤΗΤΑΣ

https://youtube.com/shorts/Z1-lQYl4x3A

## My collaborative  part of work!

**Objective:** To cultivate in our students the value of cooperation, interaction between them and the joy and creativity of teamwork.

**Activity:** Each school undertook, after organization and distribution made by the colleague from Turkey, Mrs. Emine Odabasin, to create some of the letters of the title of the project. In our school, the letters S and W happened to be created by the children.

Our collaborative work !

STEAM THE WATER CYCLE

eTwinning

Artsteps   https://www.artsteps.com/view/6496165da2ce783f06242b23