



**Project Erasmus+ „Good Start, Grow Smart”
2016-1-RO01-KA219-024394_1**

Math in the kindergarten

Good practices guide

2016-2018

**Editura GRAFIX
Craiova, 2017**

CONTRIBUTORS

ROMANIA

Grădinița cu Program Prelungit Nr. 8 Tg-Jiu, Gorj

Sina IONESCU
Aurora SLIVILESCU
Anda-Janina GRUESCU
Mihaela SMEU
Ionela VĂDUVA
Ana-Letița CHIVULESCU
Daniela POPESCU
Cicilia MĂLĂESCU

ESTONIA

Sillaotsa School – Haaslava Parish,
Päkste village – Tartu County

Monica TÄHE
Küllli VUNK
Merle KIIS
Eget SÄDE
Anne KÄGO-SAUNASOO
Viia SEPPO
Anne LÖSSENKO
Anne AULIK
Ester LUIK

FRANCE

École Les Moulins – Barbentane – Provence,
Alpes – Côte d’Azur

Pascale LUNAIN
Pascale SURRET-CHACORNAC
Sophie SANZ
Sophie ROQUE

TURKEY

Sehit Anil Eruluc Kindergarten, Salihli, Manisa

Fatma KUTLU OZERKEKOGLU
Gurcan DEMIR
Pinar OZYURTER
Sukran KOYUNCU
Sevgi YILMAZ
Bircan KOZ
Gulcan UYKAN
Nurcan AYDIN
Dilsad Nur KINIK
Zeynep GUREN
Ayse Gul BANCAR

BULGARIA

CDG 29 „Lubimka” – Dobrich

Miglena VELIKOVA
Delyana MILEVA
Sneza VACHEVA
Svetla VASILEVA
Aniela STEFANOVA
Rumyana PAVLOVA

ITALY

Nuova Direzione Didattica – Vasto – Abruzzo

Mariangela PELUZZO
Paola MELIS
Federica FALASCA
Miriam STANISCI
Adelina D'OIDIO
Raffaella OENSI
Antonella DI ROSSO
Ilaria DI BLASI
Pina ANGELILLI
Rosella DI GIACOMO
Rosa MENEDEO
Cinzia FEBBO

Descrierea CIP a Bibliotecii Naționale a României

Project Erasmus+ „Good Start, Grow Smart”- Math in the kindergarten :
Good practices guide / (coord.) Sina Ionescu, Aurora Slivilescu, Anda-Janina
Gruescu, Mihaela Smeu, Ionela Văduva, Ana-Letița Chivulescu, Daniela Popescu,
Cicilia Mălăescu. -Craiova: Grafix, 2017

ISBN 978-606-791-658-4

372.24(4)

Editura *GRAFIX*, România
Str. Vrancei, nr. 20
Tel.: 0763 356 496
edituragrafix@gmail.com

ISBN 978-606-791-658-4

INDEX

Preface	Page	4
Chapter 1 “A brief overview of the Erasmus+ Project “Good Start, Grow Smart” - 2016-1-RO01-KA219-024394_1”	Page	6
Chapter 2 “Numbers are everywhere”	Page	9
Chapter 3 “How high? How low? How much? How little?”	Page	75
Chapter 4 “What’s your angle on that?”	Page	128
Chapter 5 “Over and over again”	Page	173
Chapter 6 “What are the chances?”	Page	262

Preface

This book is one of the main products of the **Project Erasmus+ “Good Start, Grow Smart” - 2016-1-RO01-KA219-024394_1**, realized with the European Commission financial support and has been made with the contribution and the very precious and effective cooperation of all the partners involved in the project: the teachers, the preschoolers, the parents and the local community. In writing this book we have in mind all teachers who want to develop research on a common theme in order to improve their educational practices, and empower their mathematical strategies and skills.

The kindergarten's aims is to promote the development of identity, autonomy and competence in children and bring them to citizenship.

Acquiring skills means playing, moving, manipulating, exploring, asking, learning to reflect on experience through exploration, observation, and comparison of property, quantity, features, facts; it means listening to and understanding narratives and speeches, telling and recalling actions and experiences, and translating them into personal and shared traits; Be able to describe, represent, imagine, "repeat", with simulations and role playing situations and events with different languages.

Before being the set of conceptual notions about numbers, mathematics is a way of rapporting with reality, organizing thought and complex activities that can be subtracted. Speaking of the developing mind referring to the age range of the school in kindergarten means referring to all those cognitive processes that activate the construction of concepts and therefore have so much relevance in the intellectual life of the individual and condition their subsequent capacity of conceptualization.

What is important, then, from the child's point of view, is not only the promotion of conceptual learning, but the capacity that they underlie, that is, the intuitive forms of the concepts defined in terms of PROTO CONCEPTS.

The proposal is to leave it free to express spontaneously, informally, and naïve any mathematical concept that the child has already since in the kindergarten, without blocking it, rather, exploiting his own ingenious, informal skills; And proceed with much didactic appraisal, so that their subsequent mental images are organized to become stable models at the right time, well organized in the mind and coinciding with the cognitively expected outcome. (Bruno D'Amore 2007)

What does the book do?

This provides examples of practical day-to-day experiences - with materials - to help colleagues in lessons plans and support educational research, which could be useful to build a developmental process on mathematics at any kindergarten.

How should the book be used?

This book is not a step-by-step guide to teach/learn mathematics. It provides approaches, suggestions and materials that could be chosen as most suitable for a specific situation, and for which specific purpose.

How is the book organized?

In Chapter 1 we give a brief overview of the project, its purpose, its character and its aims.

In Chapter 2 “Numbers are everywhere” Teachers and children from the schools involved in the project have developed didactic activities regarding numbers and counting.

In Chapter 3 “How High? How low? How much? How little?” Teachers and children from the schools involved in the project have developed teaching activities concerning sizes, measures and measurements.

In Chapter 4 “What’s your angle on that?” We focused on the metacognition and process of reflection on the part of children, inviting them to observe the surrounding reality recognizing their magnitudes, heights and geometric shapes.

In Chapter 5 “Over and over again” The contents of mathematics previously dealt with using the computer as well as the specific didactic software have been presented and deepened.

In Chapter 6 “What are the chances?” The kids could experiment and reflect on the chances.

This publication has been produced with the financial assistance of the European Commission. The content of this publication reflects the views only of the author, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.

“MATH in kindergarten” can be used, copied and reproduced in any form, and translated, in whole or in part, for educational or research purposes.

Chapter 1

A brief overview of the Erasmus+ Project “Good Start, Grow Smart” - 2016-1-RO01-KA219-024394_1

SCHOOLS INVOLVED:

- Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj;
- Turkey – Sehit Anil Eruluc Kindergarten, Salihli, Manisa;
- Italy – Nuova Direzione Didactica – Vasto – Abruzzo;
- Estonia – Sillaotsa School – Haaslava Parish, Päkste village – Tartu County;
- Bulgaria – CDG 29 “Lubimka” – Dobrich;
- France – École Les Moulins – Barbentane – Provence, Alpes – Côte d’Azur;

Purpose and character of the Project Erasmus+ “Good Start, Grow Smart” 2016-1-RO01-KA219-024394_1

- The idea of the project is to popularize the implementation of active learning methods based on educational projects with young children. The children become "active learners", acquiring broader skills and competencies that are important for being successful in life. The period of kindergarten and primary school age is unique in the growth of man. During this period, an intensive mental and physical development takes place, which layers the foundations of the personality of the child.

- Early childhood is the stage at which education can most effectively influence the children's development. The European Union therefore wants all young children to be able to access and benefit from high quality education and care. Reliable information on ECEC systems in Europe is essential in order to understand what challenges are facing European countries, what we can learn from each other, and what new solutions might be developed to meet the needs of the youngest members of society.
- The project will develop curriculum based cooperation of preschool teachers, by challenging them to use the skills of multicultural team working to fulfill the outlined local and international project activities. This will be further enhanced by development of preschool teaching materials within the project process. Because early experiences affect later education outcomes, providing young children with research-based mathematics and science learning opportunities is likely to pay off with increased achievement, literacy, and work skills in these critical areas. High quality math and science education given to the pre-school children can both prevent learning difficulties in primary school period and plays a key role for motivating pupils to the primary schools.
- Therefore it is very important for the pupils to experience rich science and maths education which will be designed neatly. In the questionnaire called "The problems in teaching science and maths in preschool term and solving proposal" implemented to the teachers to the working in the partner schools, the following points are striking; not given enough opportunities to learn by doing-lived and to discover their own, Weak attitude and achievement motivation for their children's math and science activities; Inadequate and effective utilization of concrete materials and educational toys, the lack of variety of used methods and techniques.

Aims of the Project Erasmus+ “Good Start, Grow Smart”

2016-1-RO01-KA219-024394_1

- to improve the attainment of young people with low basic skills in numeracy, literacy and science;
- to develop high quality and accessible Early Childhood Education ;
- to revise and strength the professional profile of the teaching professions;
- to exchange experiences and good practice, carry out peer learning activities and workshops;

- to increase parent and child interaction time on basic mathematical and scientific based activities;
- to improve the schools' approaches and teaching methods towards attaining and developing skills in science and math;
- to develop better learning strategies based on good-practices in all participating schools;
- to emphasize the quality of education in preschools and find solutions to increase the cooperation with parents;
- to share cultural diversities in preschool education;
- to encourage teachers to introduce innovations;
- to strengthen the professional skills of the preschool teachers.

NUMBERS ARE EVERYWHERE

October 2016



Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj

Level: II

The Age of children: 5-6 years old

Activity category: Mathematics

Theme activity: NUMBERS ARE EVERYWHERE (*We learn to count and play with autumn*)

The type of activity: systematization and verification of knowledge

The method of achievement: Math exercise game

The purpose of lesson: -systematization and verification mathematical knowledge on the acquisition and use of numbers from 1 to 5;
- practising operations mathematical thinking;

Operational objectives:

□ **cognitive objectives:**

- to identify elements specific autumn season by formulating the correct answers to riddles;
- to identify numbers from 1 to 5;
- to form crowds with similar elements by comparing the quantity with the number
- to put the crowds after the ascending number, making up a numerical scale from 1 to 5;
- to identify the quantity by reporting to the number;
- to identify the number by reporting to the quantity;
- to determine the order of the elements set in a string made from 1 to 5;
- to resolve problems in written and oral by reasoning hypothetical-deductive, using mathematical tokens and the content of the problem written like a poetry;
- to compose the number 5;

□ **psychomotor objectives:**

- to written numbers from 1 to 5;

□ **affective-motivational objectives:**

- to participate in the game with pleasure;

□ **Teaching strategy:**

- **Methods and processes:** exercise, conversation, explanation, observation, demonstration, questioning;
- **Material resources:** chips figures, tokens representing specific elements of autumn, riddles, rewards;



- **Type of organization:** front;



- **Resource time:** 35 minutes;

TEACHING SCENARIO

To bring children closer to the world around him and the activity theme, I present them a riddle:

They went in sunny countries

Migratory birds,

Because to us it is cold and raining,

The wind blows strongly,

The leaves have fallen, too.

Gathered in the pantry

All the ripe fruits are the tip.

It is not difficult to guess,

What season has arrived?

The answer to this riddle is autumn.

And, because they answered correctly, I ask them to list the few elements of nature, some changes that are specific to this season, focusing on wealth (vegetables and fruits) which are now in our pantry.

I present a new riddle which will make the transition to the items that will be represented by the mathematical chips or rewards:

Rounded, colorful,

They are kept in the
pantry

And with them cleaned,
Make wonderful pies.

(The apples)



Children will get to the end game, as reward for participation to the activity, the correct operation and solving tasks, customized medals representing apples.

And, because this activity is focused on math and autumn elements, numbers, I move to a new riddle for identify the element which the children will be use for realising the numerical scale :

Deflated
balloon, Yellow
colored, Has
mustache And
calls

(pear)

Task 1: With these elements children form numerical scale from 1 to 5, increasing sequence.
They sit next to each number identified the same number of identical elements.



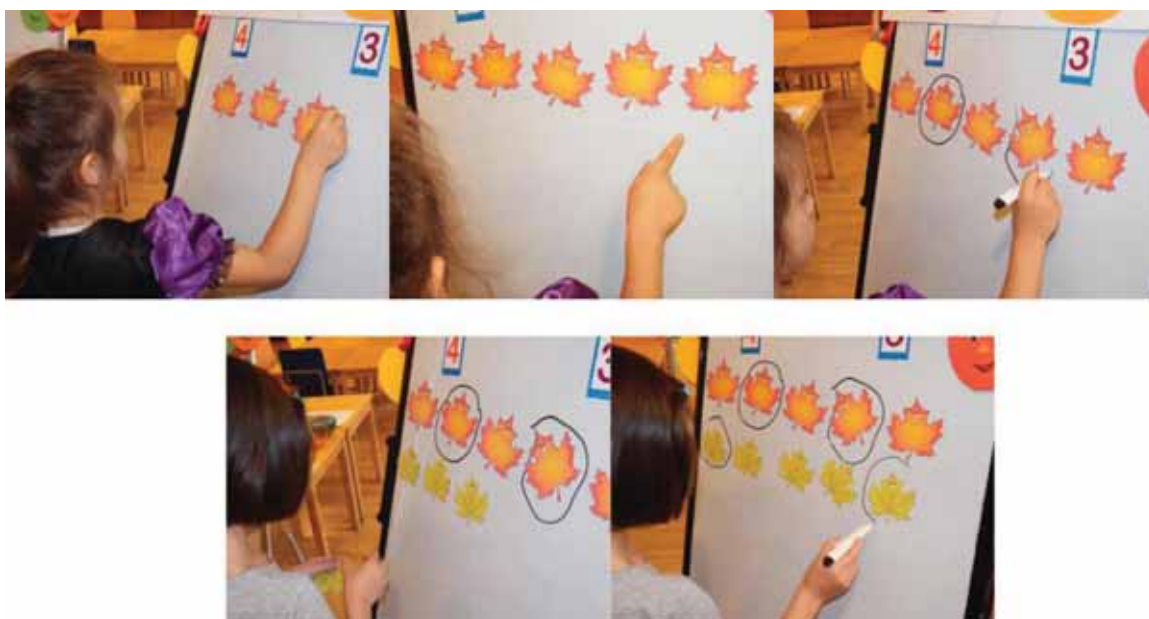
Task 2: Children put in baskets as many apples as the numbers from these.



Task 3: Children count the apples from the dishes and then they say what is their number. They find the correct number and they put it on the image.



Task 4: Children arrange two rows of leaves, one row of green leaves and the other, with rust leaves. Then they must find the second and the fourth leaf, the first and the second leaf from the rows.

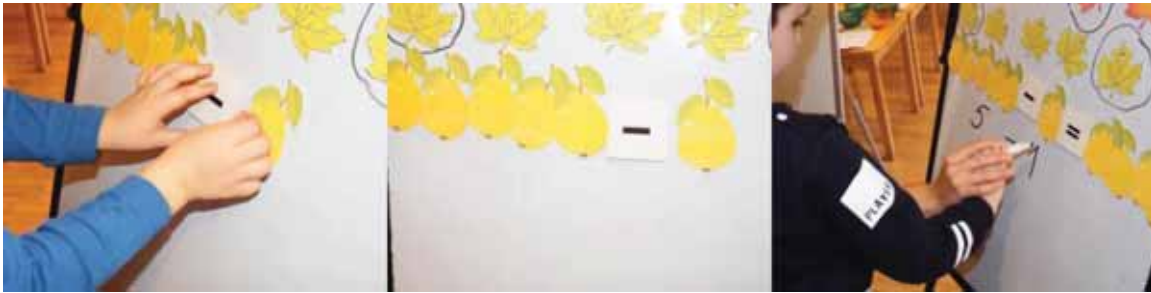


Task 5: I present a problem, but my problem is a poetry:

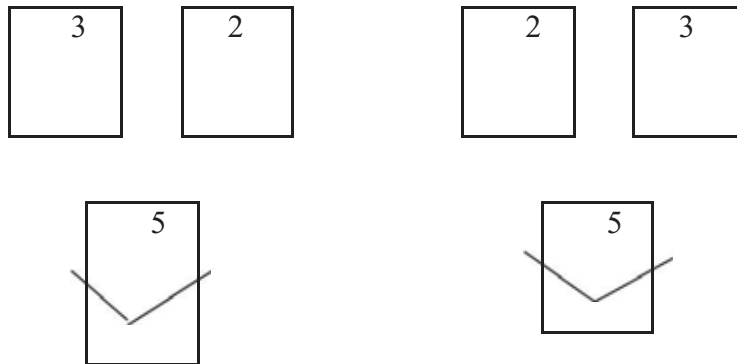
On the table are five quince,
If you take one quince, I wanna know.
Well if you count, How many are left,
Do you know?

Children resolve this problem using decrease ($5-1=4$)

The answer is four quince.



Task 6: When autumn is coming, all the trees are sad. My tree is very, very sad and it is crying. She wants back its leaves. We must to help it to recover all that leaves. But on it I see a number, it is number 5. So we put 5 each leaves (from different colours). In this way we compose number 5.



Finally, for their activity and for their results, children earn rewards. The costumed apples are very happy to be their friends.



Turkey – Sehit Anil Eruluc Kindergarten, Salihli, Manisa

The Age Of Children: 5-6 years old

⊙ OPERATIONAL OBJECTIVES

⊙ Cognitive Objectives:

- ⊙ to identify numbers from 1 to 5;**
- ⊙ to compare the quantity with the number**
- ⊙ counting objects (1 to 10)**
- ⊙ make pairing (1 to 5)**
- ⊙ to determine the order of the elements set in a string made from 1 to 10;**
- ⊙ 10-piece (1 to 10) puzzle makes**

⊙ Motor Objectives:

- ⊙ to written numbers from 1 to 5;**
- ⊙ to throwing different objects at a target**

⊙ Affective-motivational objectives:

To comply with the rules of the game

⊙ MATERIALS

- ⊙ colored papers, scissors, glue, paper cup, plastic spoons (White and transparent color)**

⊙ New Words

- ⊙ transparent**

⊙ CONCEPTS

- ⊙ Circle, piece-whole, little-lot, 1 to 10 numbers**

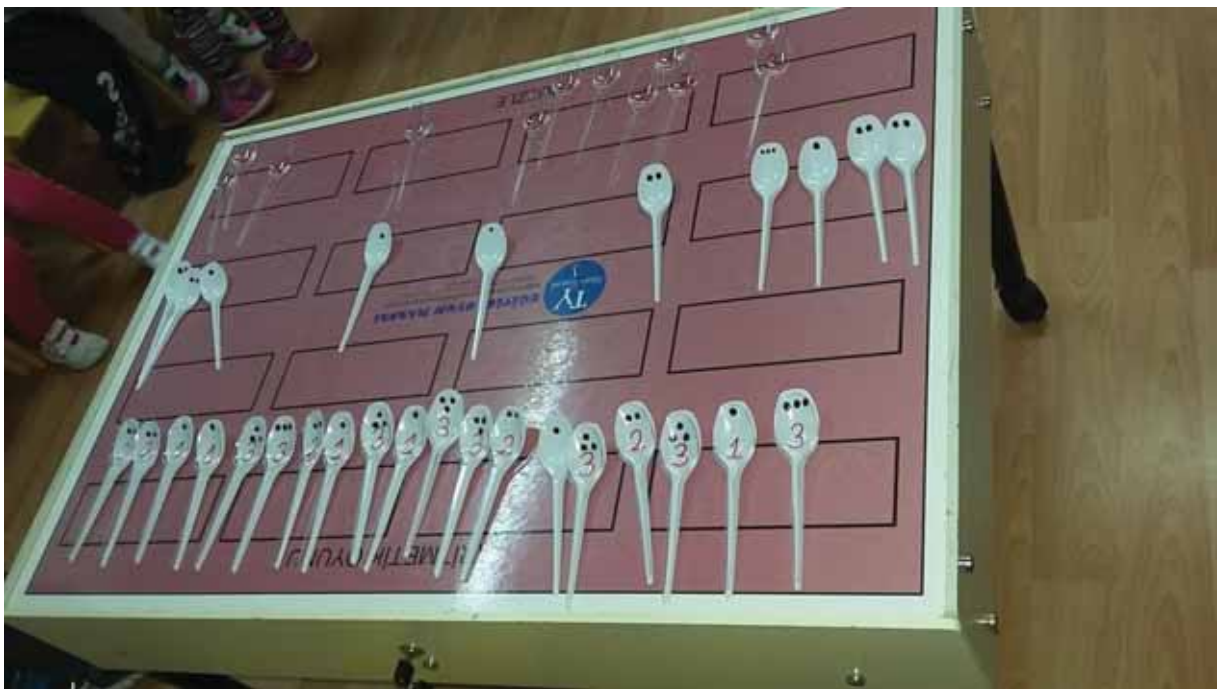


TEACHING PROCESS

- Colored papers drawn in circle shape are given to children.
- The children are asked to cut the apartments with scissors.
- They are asked to paste in order.
- And caterpillar occurs...



© And then, number matching game is played.



Transparent spoon = numbers

White spoon = points

(number matching)

© Children play the ring game.

© rings toss (up figures)



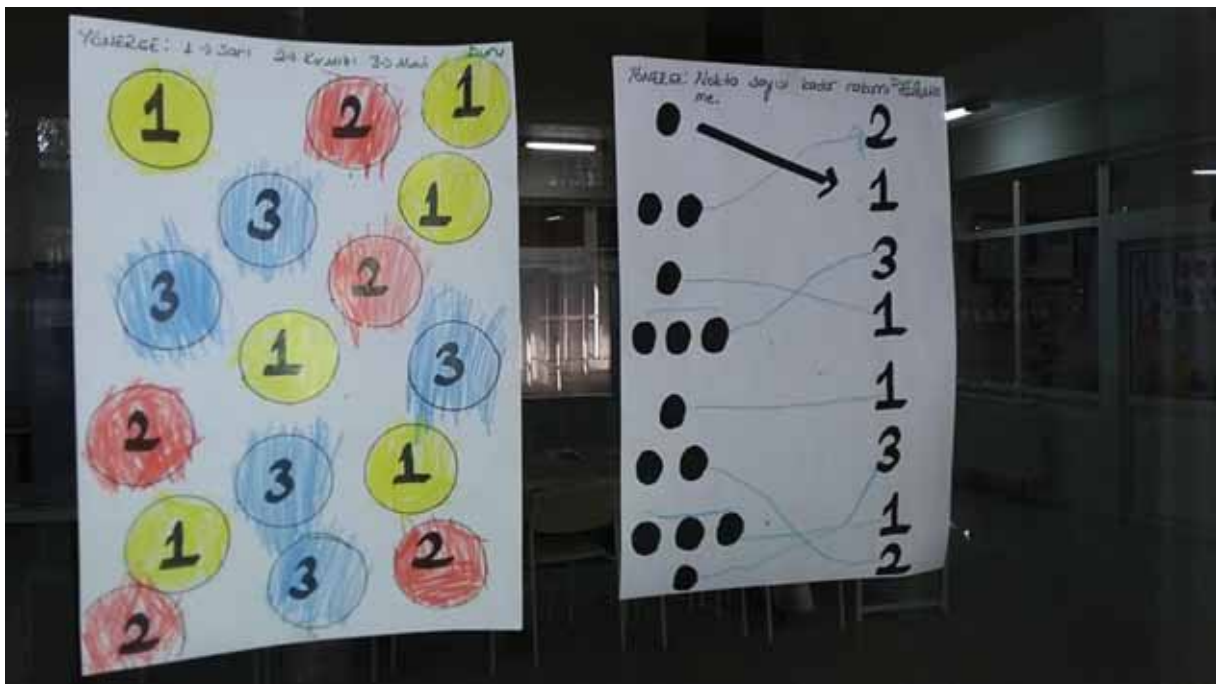
Parent Participation Events

Parents are asked to play games with their children.

(number matching)

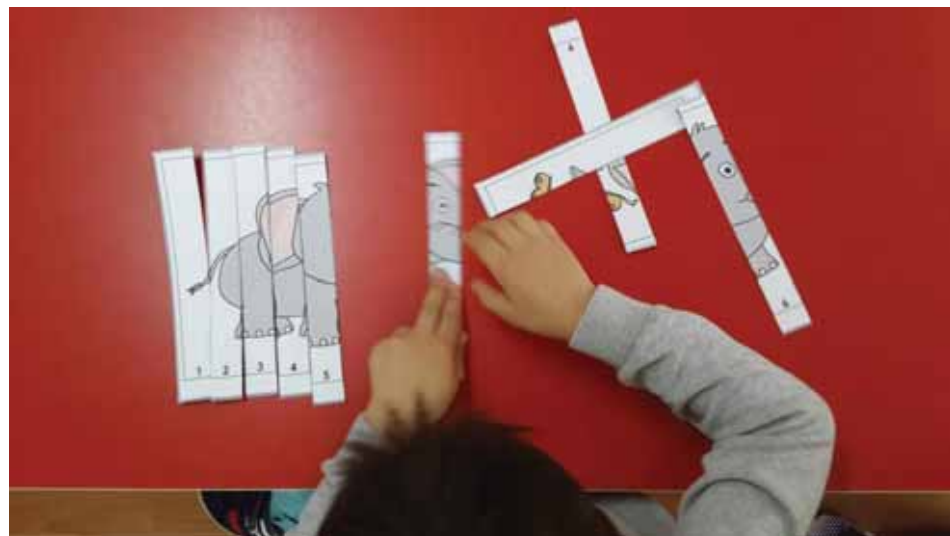
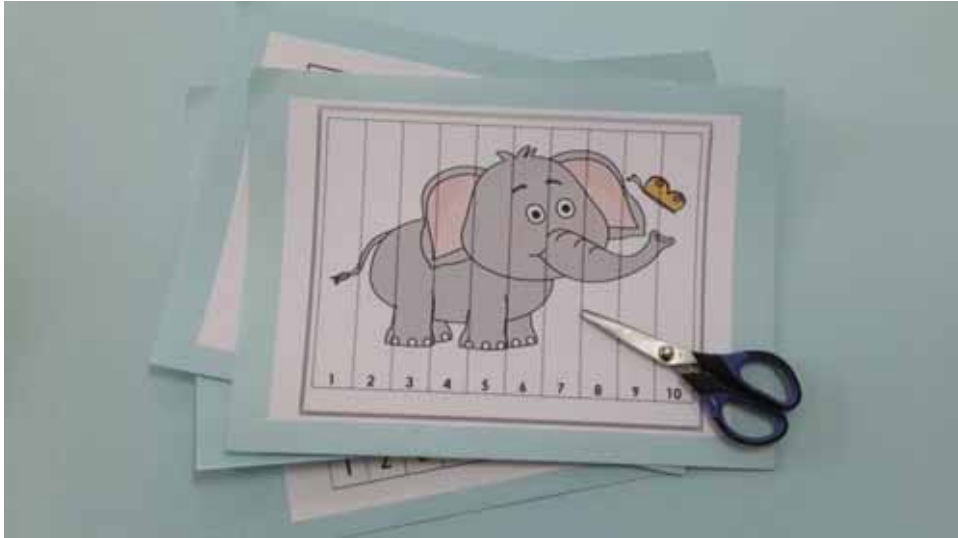
OTHER MATHEMATICS ACTIVITIES

- ⊙ Objects count, observations, grouping, pairing, comparison, arrange, measuring.
- ⊙ Create a pattern.
- ⊙ Do simple addition and subtraction operation.
- ⊙ prepare a graphic.





PART-WHOLE AND NUMBERS



NUMBER WRITING IN SAND



Italy – Nuova Direzione Didactica – Vasto – Abruzzo

RECIPIENTS: 3/4/5 years old

TIME: October 2016

EUROPEAN KEY SKILLS

- ✘ Basic skills in mathematics
- ✘ Learning to learn

FIELD OF EXPERIENCE

- ✘ Knowledge of the world
- ✘ The body and movement

DEVELOPMENT SKILLS GOALS:

- ✘ The child has mastered the strategies of being and operation of counting with numbers
- ✘ The child fully live their corporeality, he perceives the communicative and expressive potential.

Knowledge

- ✘ Numbers
- ✘ Numbering
- ✘ Counting.

ABILITIES

- ✘ Grouping
- ✘ Sorting
- ✘ Counting
- ✘ Make experience with the first forms of counting.

METHODOLOGY

- ✘ Playful
- ✘ discovery learning

- ✗ work group and individual work
- ✗ Tutoring
- ✗ Peer to peer.

MATERIALS AND TOOLS:

various kinds of stationery (color, cardstock, awls, scissors), plastic bottles, clothes pegs, wire, plugs, pc, cd player.

AIMS

3 years old	4 years old	5 years old
<ul style="list-style-type: none"> • Make simple classifications raw and recognize quantities up to the number 5. 	<ul style="list-style-type: none"> • Group, compare and sort objects, experimenting with early forms of numbering and number recognition (up to number 10). • Apply the basic motor pattern: grasp. 	<ul style="list-style-type: none"> • To know and to work with the quantity, compare and order objects; associate the quantities to the number sign (up to number 10 and beyond). • Apply the basic motor schema: target / launch.

It was decided to explore the concept of number and numbering principally using structured and recreational activities for the three distinct age groups (3-4-5 years).

Children already have a basic understanding of numbers and counting, for example in daily routines during the appeal is commonly used in all sections to make a count of the children present and absent, preferring the count with the use of the fingers.



For example, three children a day: the first counts all children, identifies the graphic symbol among those available for the number and attacks on the billboard of the "calendar" section; the second child will count the male children and the third girls.











After selecting count, we proceed with the reflection on what group of males and females is the most numerous and how many units, experiencing the first forms of counting. Children can be helped in this by making them have two lines facing each other (the males in front of the females) to be able to actually see the difference in units between the two groups.



Everything can be represented on the board.



To introduce the topic it was proposed the video of a sing of numbers "Sing and learn numbers up to 10", from www.youtube.it site. The song was later downloaded in mp3 format and proposed every day after the appeal. Children in teamwork have recreated the castle with 10 doors described by the lyrics.

✘ <https://www.youtube.com/watch?v=-8x4EyGOq04>

3/4/5 years old - “Let’s sing numbers”

Children in group work have recreated the castle with 10 doors described by the lyrics.



Under each door it has been put pockets where children in structured recreational activity, should introduce the right number of caps corresponding to the number indicated by the port. In this activity, children 5 years are tutors of younger children.



It was later proposed the nursery rhyme "painter Autumn" that has been the backdrop for a number of supplement-graphic pictorial activity numbers.

AUTUNNO PITTORE

L'autunno è arrivato,
tutto quanto ha pitturato:
piante, foglie, frutti e fiori
di bellissimi colori.

Sulla testa ha un gran cappello,
pioggia e vento nel mantello;
tanti grappoli dorati
sono stati vendemmiati.

Lavora il contadino
seminando dal mattino;
il granturco già maturo
lo ripone di sicuro.

Mentre cadono le foglie
buona frutta si raccoglie:
fichi, pere e nocciole...
poi riaprono le scuole.

"painter Autumn"

Color the berries according to the number required



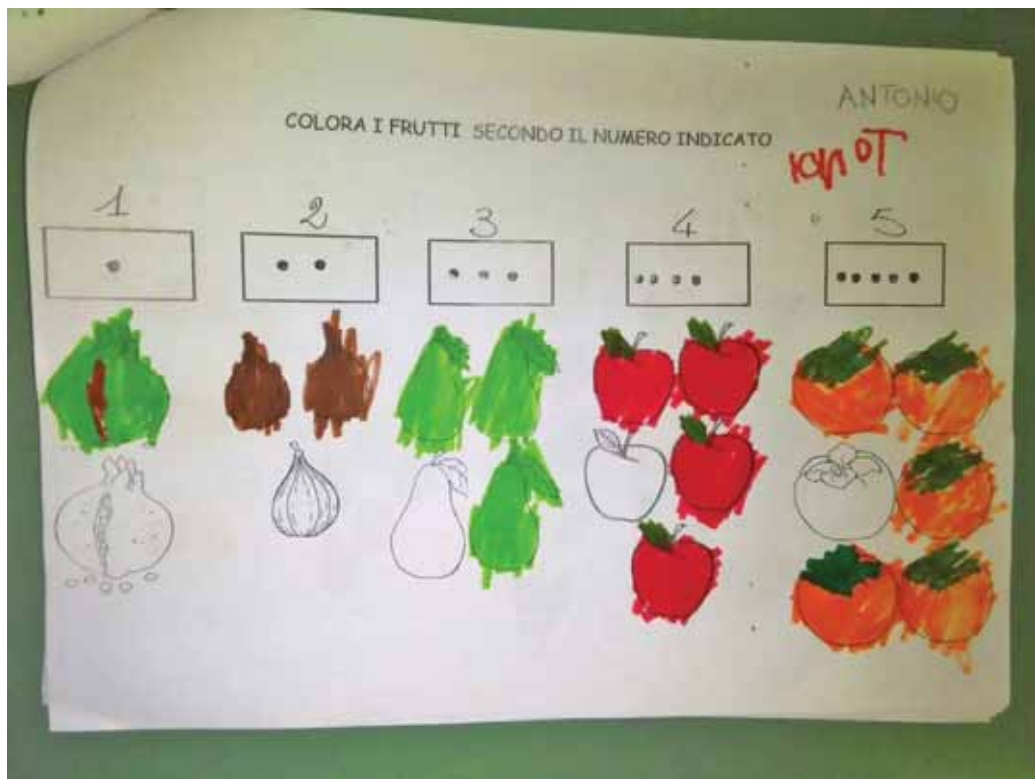


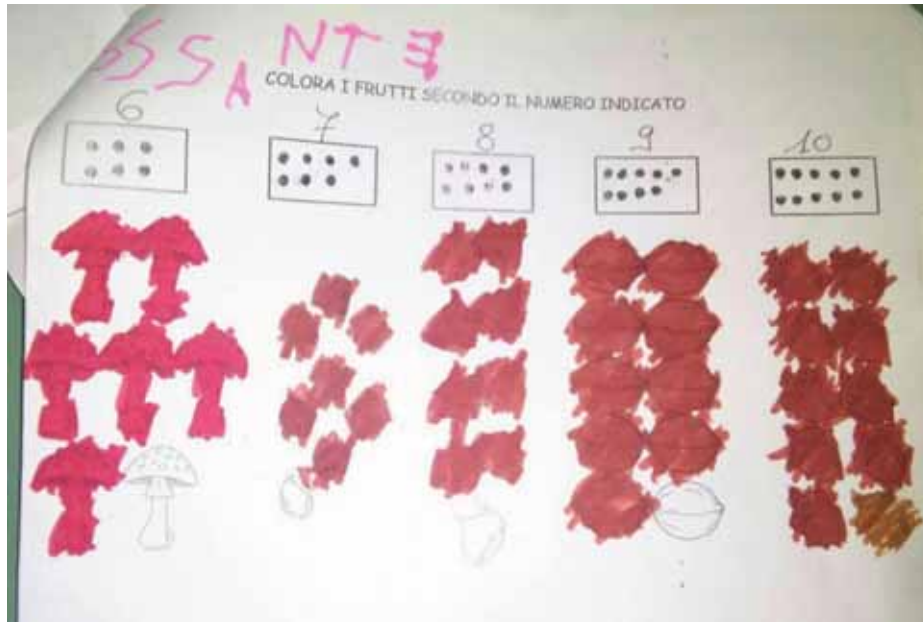
Paste the seeds according to the number required





Color the fruits according to the number indicated





Finally, to reinforce learning we create games to fit in the box of creativity, available throughout the school year.

5 years old - “Strike!...play bowling”

After preparing the playground and the necessary tools (bowling pins and ball), the children are divided into six teams (Estonia, Bulgaria, France, Italy, Romania, Turkey) to play a game of bowling. In turn, the component of each team after targeted and launched the ball on bowling pins, he must count the pins and score as many points as pins have fallen.



A practical time and cognitive meta reflection because in addition to mark the points of the fallen bowling pins, we pause to count the remaining carrying first mathematical operations. After the tour for all teams, we proceed with the counting of the total points.



To mark the points we first used the clothes pegs hanging by a thread, then we switched to graphic sign and the numerical symbol, each child writes many vertical lines as there are fallen bowling pins and the reference numerical symbol.



4 years old - “The numbers handkerchief”

After preparing the cards with numbers from 0 to 9, the children are divided into two teams and arranged in two parallel rows. Facing each other wearing the badges with the numbers (in 1 ° opposite one another, in 2 ° opposite one another, and so on ...), the teacher wearing the number 0 because it is the 'referee and should do 0 points because it does not compete (for thought on the number zero and the amount indicating).



The teacher then calls a number and the two children of the two teams wearing that number must take the handkerchief held by the teacher.



The first who takes it to win must hang so many clothes pegs as indicated by the number he wears. After a bit of rounds you mix the numbers and tags are redistributed differently to children for another round of calls.



3 years old - “Numbers in your pocket ... we play to count”

An easy game built with the children to teach counting and that lends itself to many variations (colors, numbers, shapes ...). Aim of the game: Enter the colorful pocket the amount of sticks corresponding to the number (the squares arranged near the pockets indicate the quantity and allow the child to count up the number required by the numerical symbol placed over the pocket).



VERIFICATION

For testing of learning we prefer a structured and recreational activity, using a board of 25 squares on the ground, within which to make a route to the numbered box chosen by the teacher, bringing the right amount of cap.



*Estonia – Sillaotsa School – Haaslava Parish, Päkste village –
Tartu County*

LESSON PLANS

October 2016: “NUMBERS ARE EVERYWHERE!”:

This is the first standard gain in the

“Good Start, Grow Smart” that is about understanding how numbers work and how they relate to each other.

1 2 3 4 5 6 7 8 9 10 11 12



Integrated learning areas: Mathematics and art
Children age: 6

Topic: number line 1-12

Learning Objectives: Children will be able to order numbers and say what number comes before and after a number from 1-12, and they will be able to recognize the numbers 1-12.

Learning activities: Mathematics Ipad game "Math is fun: Age 5-6"; This app teaches children to count, to add numbers, to order numbers and to handle shapes. We can play the clock game: They have to find the missing numbers and then put them in the right order around the clock.

Needed learning tools/materials: Ipads, app "Math is fun: Age 5-6".

Craft materials: coloring paper, pencil, scissors, glue

Game activity description

- Children had to identify the missing numbers from the list and put them in the right places around the clock.
- If they succeeded in that, balloons appeared on the screen and they could hear the applause.
- The game was to be played many times.

- There was a new version every time, different numbers were missing.
- If it was too easy to order the numbers from 1 to 12, the teacher changed the task and they had to order the numbers in the opposite direction, meaning from 12 to 1.
- The game was finished when the child succeeded several times – they gained positive emotions.



Craft activity steps

- Cut a circle out of paper
- Cut small squares out of paper to stick onto the clock.
- Write the numbers onto the squares.
- Draw the clock hands (hour hand and minute hand) on the clock



Bulgaria – CDG 29 “Lubimka” – Dobrich

Improving and assimilating of the skills for comparing and arrangement of the numbers till 10 in all groups:

- Digital (number) row's models/models of digital row;
- Practical introducing with number and digit (cipher);
- Comparing of quantities objects in group; arranging in group;
- Graphical modeling of quantities.

Group I /3 years/



Colors

Group II /4 years/



Explore shapes and colors



“Fun Sticks”

Connect.
Color



Quantitative counting.

Comparing the groups



"Every figure in his house"

Grouping objects in shape and color.

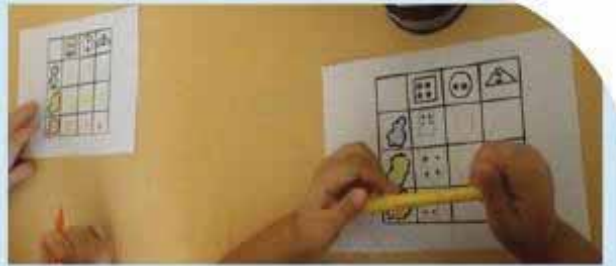
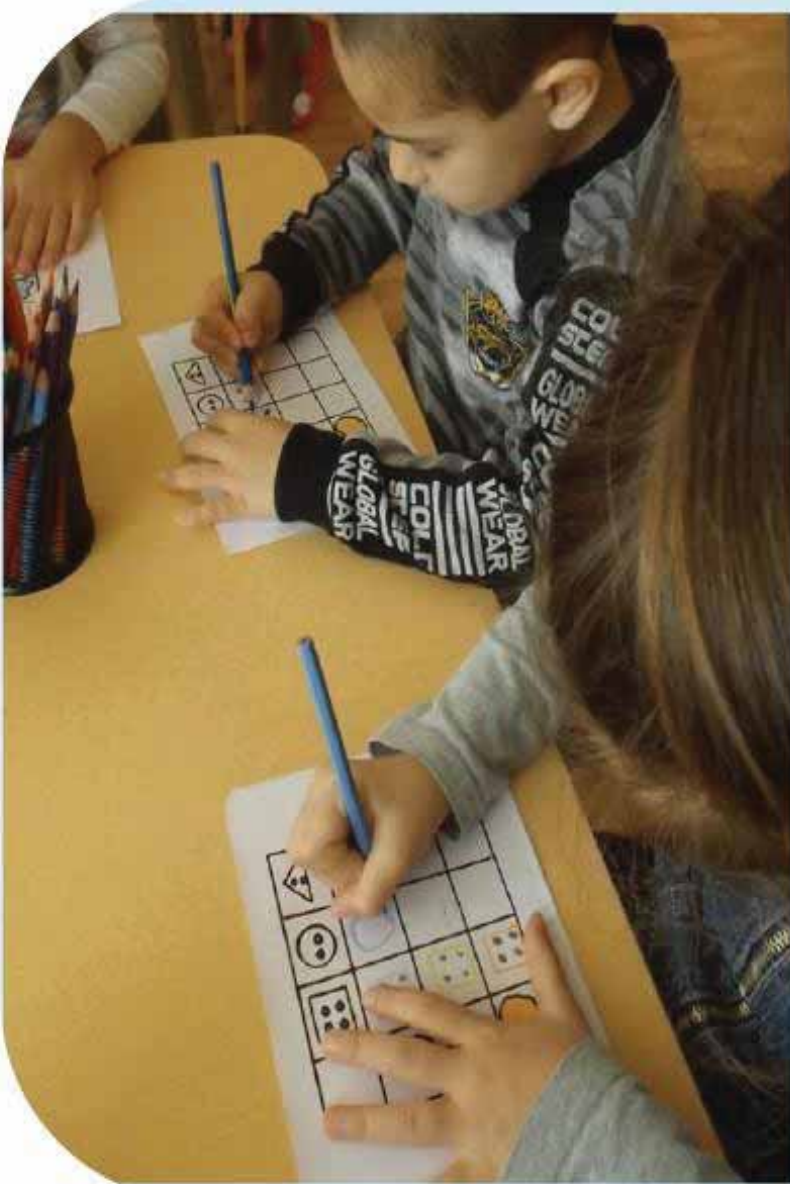


Group III /5 years/



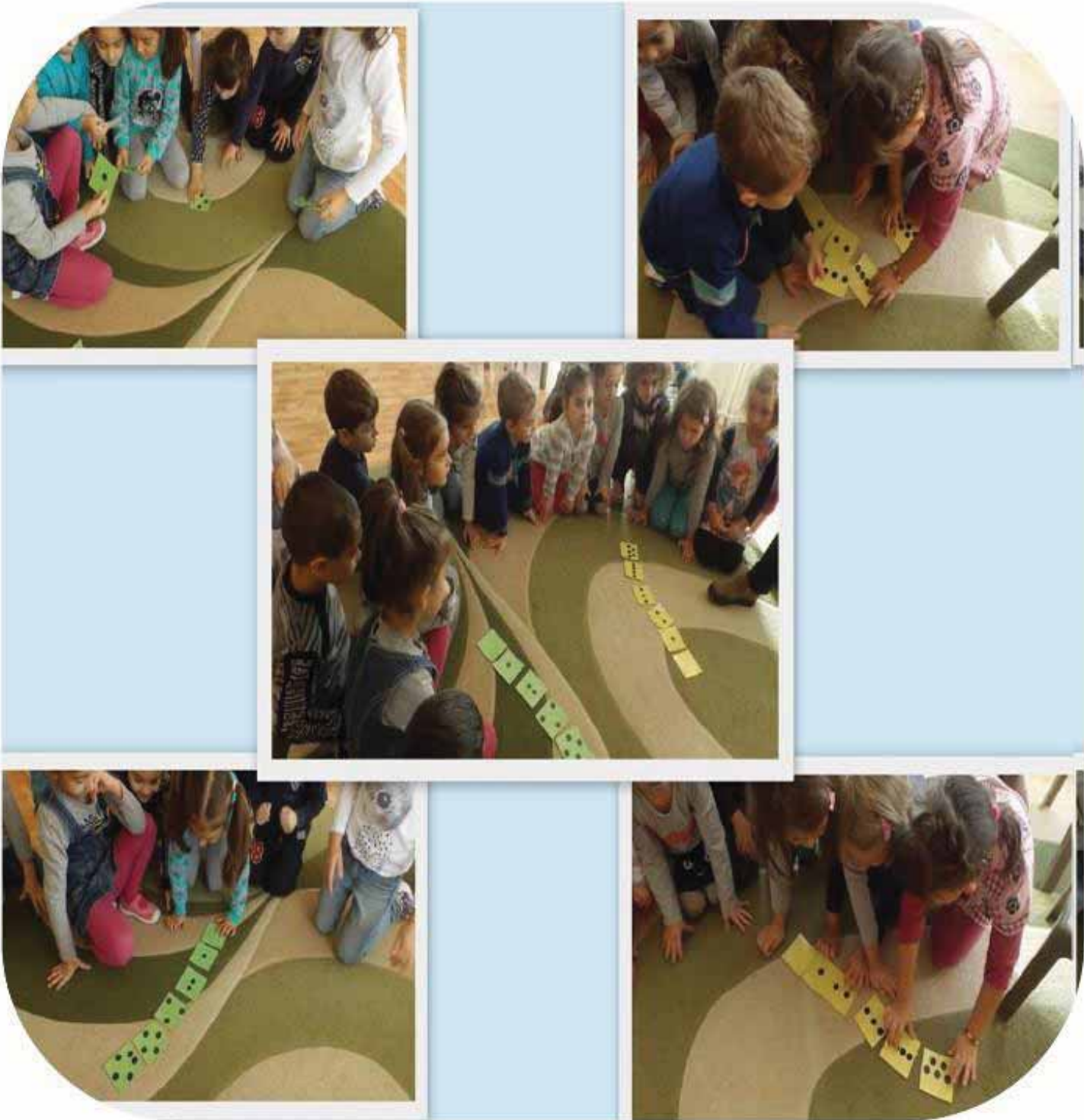
Sea chess

Coding



Dominoes.

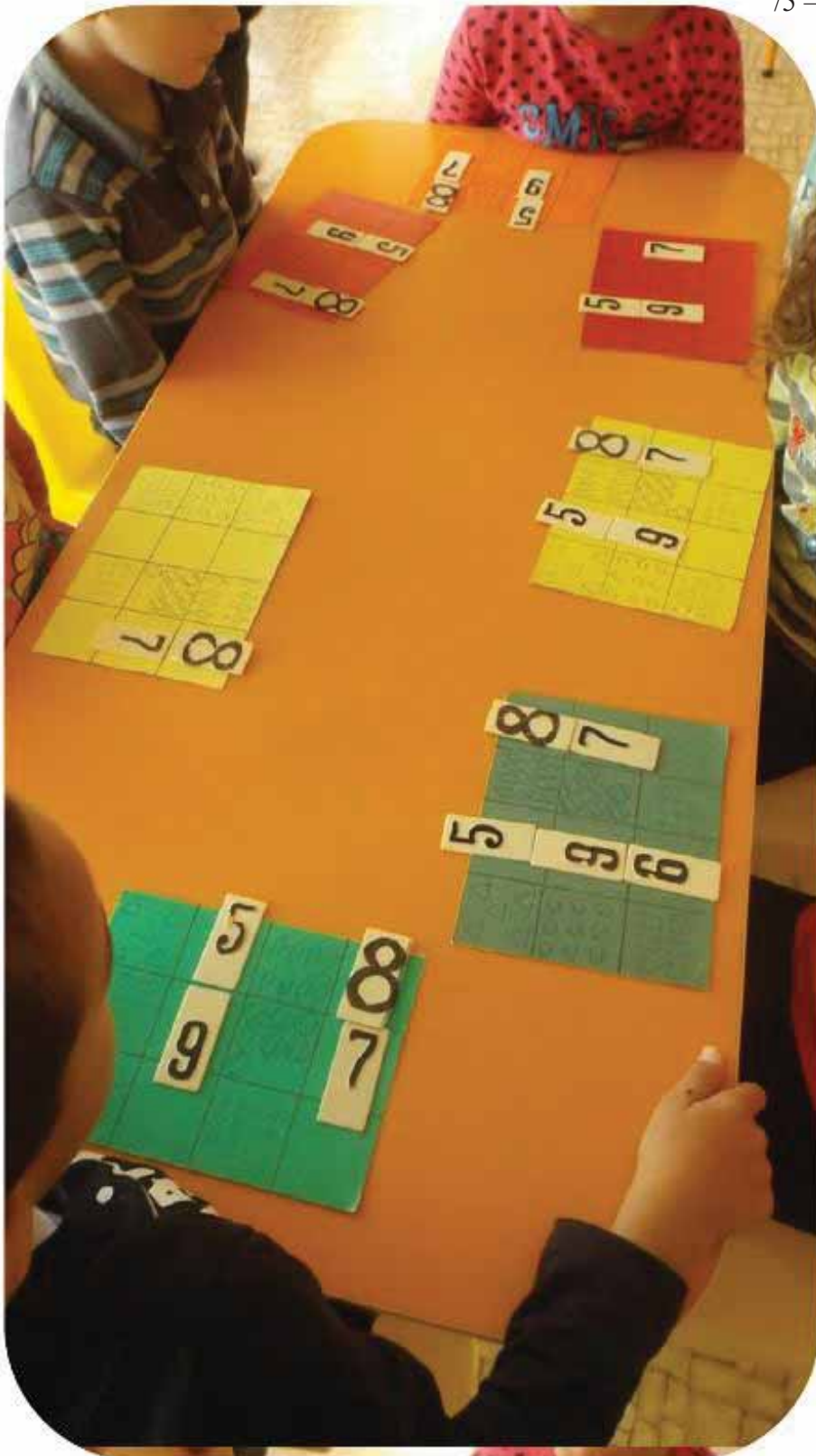
Sort in descending and ascending



Writing the digits of
natural materials



Group III
/5 – 6 years/



Referencing
elements of
sets and
numbers

Grouping.
Comparing the
groups

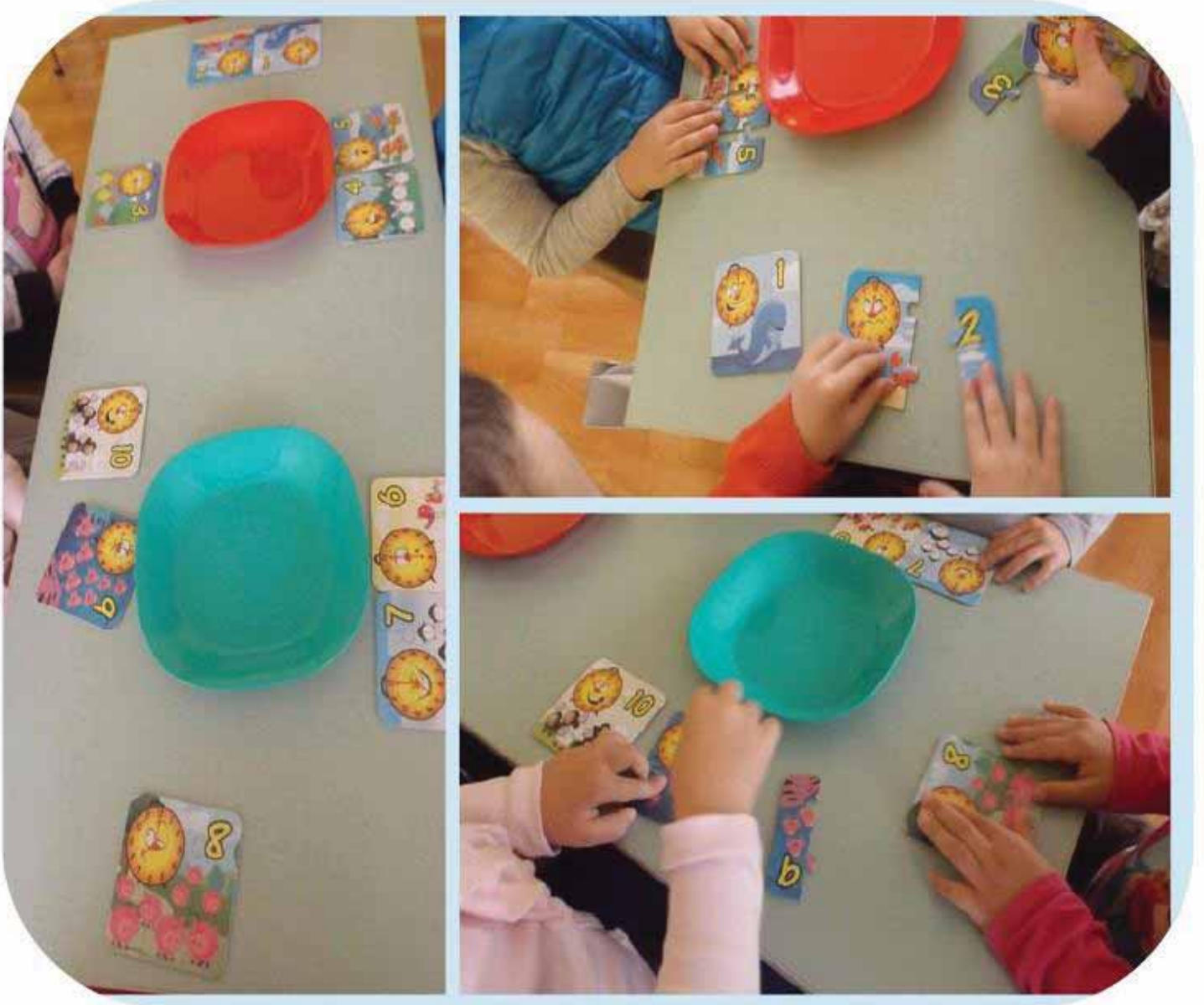


Modeling with
geometric shapes

Grouping similar objects.
Reference to figure



Group IV /6 years/



Puzzle



Count





Dominoes



Racing game





Writing the digits of natural materials



France – École Les Moulins – Barbentane – Provence, Alpes – Côte d'Azur

The little rabbits
(decomposition of number 5)

5/6 years olds

To stabilize the knowledge of small numbers

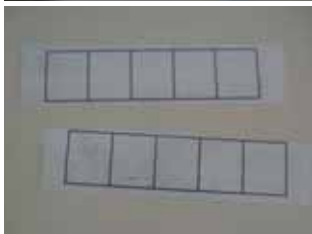
- To quantify collections up to 10 at least
- To compose and decompose them by effectively manipulating them, then mentally.
- To tell how much must be added or withdrawn to obtain a quantity lesser than 10

1st SESSION: The little rabbits

Organisation :

- Tutorial with 6/8 children

Material :



Rabbit finger puppets
squares

Boxes with 5 compartments

Laminated cards with 5

- Tokens or chips

- Erasable felt-tip pens

➤ **Step 1:**

1 little rabbit meets another little rabbit
2 little rabbits play in the garden

2 little rabbits meet another little rabbit
3 little rabbits play in the garden

3 little rabbits meet another little rabbit
4 little rabbits play in the garden

4 little rabbits meet another little rabbit
5 little rabbits play in the garden

memorising the nursery rhyme

The teacher presents the 5 finger puppets. He/she recites the nursery rhyme by putting one by one a rabbit on the fingers of his/her hand.



The teacher then shows the children how to recite the nursery rhyme by playing with one's fingers (without the finger puppets). The children recite the nursery rhyme by playing with their fingers.



- **Step 2 :**
representi
ng the numbers in a box with 5 compartments

Each child receives a box with compartments, which represents the house with a room for each rabbit, and 5 tokens/chips which represent the rabbits. The teacher explains that the chips replace the finger puppets as there aren't enough puppets for all children.

The children then place the requested number of rabbits into the box:
3, 5, 1, 4, and 2



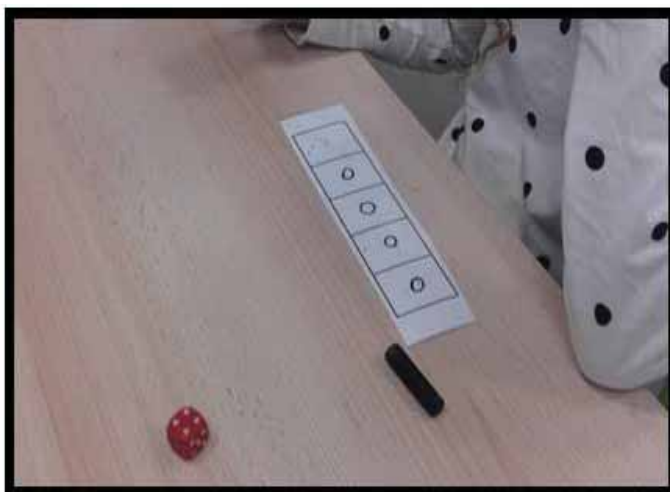
The teacher explains each time the decomposition of 5.

For example: 2 rooms with a rabbit, 3 rooms without rabbits.



➤ **Step 3: representing the numbers on a card with 5 squares**

















The teacher distributes a laminated card representing the box with 5 compartments and a felt-tip pen.



Drawing the numbers of tokens shown on the dice, written by the the teacher or shown by the teacher's fingers.

➤ **Step 4 : Consolidation exercises**

Drawing the indicated number of tokens in the boxes.

2nd SESSION: Rabbit Problems

Objective: Find the complement to 5

➤ **Step 1: Presentation of the problem**



Presentation of the models (garden, rabbit hole).
The rabbits are placed in turns on the cabbages while reciting the nursery rhyme «The Little Rabbits»



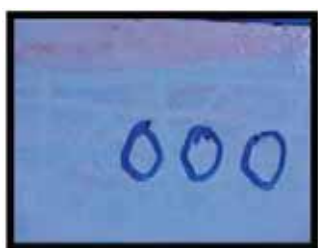
The teacher then announces that the rabbits are now tired and that they must all go back into their rabbit holes.

→ How many rabbits are there in the rabbit hole? Insist on the fact that there are still 5 rabbits.

➤ **Step 2: Solve problem n°1**



The children close their eyes while the teacher puts 2 rabbits into the «garden» and 3 into the «rabbit hole».



The children have to find the solution of how many rabbits are in the hole. They then draw or write the answer.



Look at the results and explain how things were done

=> **Notice that the number of rabbits corresponds to the number of empty cabbages.**



Validate by opening the «rabbit hole» and notice that 5 is made up of 3 and 2.

Repeat with the numbers 4, 2, 1, 5, and 0.

➤ **Step 3 : Solve problem n°2**



Place 4 rabbits in the «hole» hide with the lid the rabbit in the garden

« How many rabbits are in the garden ? ».

The children search for the right answer – in silence, on their own and without saying a word - and draw or write it down.

Look at the results and explain how it was done.



=>The Children may no longer use the cabbages and have to find mentally the complement of five.

Validate by opening the «garden» and notice that 5 is made up of 4 and 1.




Repeat with numbers 3, 1, 5, 2, 0.








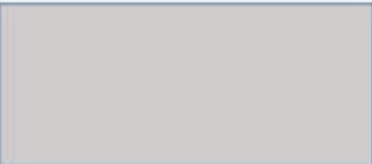
=>Tokens can be handed out so that children with difficulties can handle them more easily during step 3.

➤ Step 4: Consolidation exercises

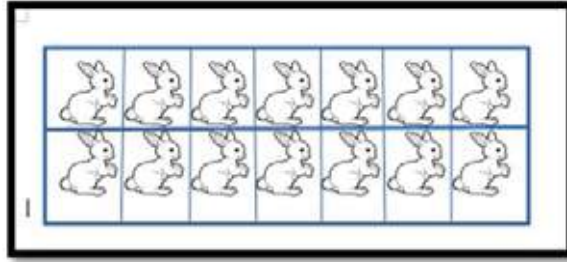
There are 5 rabbits



How many rabbits are hidden in the rabbit hole?

Cut out and glue the correct number of little rabbits into the grey fields.



This sequence has been adapted from « Vers les maths Grande section » («Towards maths ») Acces Editions

HOW HIGH? HOW LONG? HOW MUCH? HOW LITTLE?

November 2016



Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj

Level: I

Age level: 3 years

Theme: “When, how and why does it matter?”

Subtheme: “Autumn color and perfume”

Experiential Domain: Science domain

Activity Category: Mathematical activity

Means of achieving: Didactic game

Subject: “Autumn’s gifts” („ How high? How low? How much? How little?”)

Activity type: skill forming

The didactic task:

- Sorting elements by the color criterion(apples)
- Realizing the quantitative differences between the elements of the groups(red apples/ yellow apples) by the global appreciation of quantity(more/less)
- Sorting and classifying/ordering elements (flowers) by the height criterion

Main objectives by experiential domains

Science domain:

- Development of premathematical intellectual operations
- Development of the knowledge and understanding of the environment, as well as curiosity stimulation for its investigation

Benchmarks:

- Communicating ideas based on made observations
- Enriching their sensorial experience, as a base for mathematical knowledge referring to recognition, naming, quantity, classification, formation of groups based on common properties

- Forming the skill of sorting the elements of an array based on their color, size and height

Aimed behaviours:

- Sorting apples by the color criterion(red/yellow)
- Noticing the quantitative difference between the 2 groups of apples by global appreciation (more/less)
- Sorting flowers by the height criterion(placing chrysanthemums in baskets respecting their height – tall flowers in the tall basket, flowers with medium tulip in the medium basket and flowers with shorter tulips in the shorter basket)
- Analysing the quantitative ratio between elements of 2 different baskets
- Using a correct mathematical language
- Pleasantly participating at the activity

Didactic strategies:

Forms of organisation: in front, in pairs, individual

Methods: conversation, explanation, demonstration, exercise, questioning

Learning materials: apples(red or yellow), baskets (big/small, tall/medium/short), working sheets

Duration: 15-20minutes

Didactic scenario

The mathematical activity begins with a conversation about the season that's about to end (autumn) and the last gifts that Autumn's Fairy left in the classroom, which we will play with together, this being the moment which marks the beginning of the didactic mathematical game: „Autumn's gifts”.



The children will observe and name the materials, apples and chrysanthemums, empty baskets. They will also observe the fact that the apples are mixed, red and yellow apples, long, medium and short chrysanthemums and the baskets are of different heights.

The first task is sorting the apples by color and by global appreciation, noticing and saying which group has more elements (more red apples, less yellow apples), task which the kids will solve, being rewarded with applause.





The next task is choosing a flower(chrysanthemum), saying how tall is it and placing it in the corresponding basket(tall, short). The higher difficulty consists in the fact that the 3rd basket, the medium one, exists. The children choose the flower they want , they globally appreciate it and notice if it is tall, medium or short, then they place it in the corresponding basket(tall, medium or short). If the flower breaks during the game, its size changing, the children will have to find solutions, placing it in the correct basket, by adjusting its height.





After the game was repeated a few times by the children, the teacher asks them to cover their eyes, when one of the baskets disappears.

The children will notice which basket disappeared and will point out which of the remaining baskets contains more/less flowers.



After every child placed a flower in the corresponding basket, verbalising the action mathematically (or not), the class obtained 3 floral arrangements which were used in decorating the kindergarten's hallway.



The activity ends with a short discussion about the season to come, winter, which will bring new flowers, icy flowers, and the children and teachers sing the first stanza of the song „Iarna a sosit in zori”(„Winter came in the morning”): „Winter came in the morning/It placed flowers at our window/ It came with its cold/ With snow and glazed frost”.

Extra-task:

- Solving the mathematical sheets correctly;



Turkey – Sehat Anil Eruluc Kindergarten, Salihli, Manisa

How Much How little

Activity Category: Mathematics (Individual and small group)

The Age : 60-72 Month

OPERATIONAL OBJECTIVES

Cognitive Objectives:

Children guess, object, situation and event (*Kids say tips. Children guess the end with clues.*)

Children, objects, or assets according to their characteristics.

(Objects, groups according to their colors..)

Prepare object graph.

(Create charts using objects Create graphics by showing objects with symbols Counts the objects or symbols that make up the graph. Explain the results by examining the graph)

Language Development

Uses language for communication.

(Start talking. He-she keeps talking. Participate in the conversation.

Social-emotional development

The child is self-confident

Express themselves in front of the group. He-she speaks different opinions when necessary

TEACHING PROCESS

- The day before, put colorful colored latches in the basket.
- Children are asked to choose a color from the basket in the desired color
- Children are asked to find a variety of objects in the color of the chuck they choose from their home. (Create color boxes)
- Color boxes brought to the court are taken to the playground.
- Children place objects from their homes. They count the number of objects they have in common.
- The children who bring the object in the same color form a group. The children in the group place their objects on the ground. Thus each group has its own color graphic.
- Then a large graphic is created by bringing the objects of different colors side by side.
- Objects are pasted on label cards as many as the number of objects to represent them. Make sure that the label colors are the same as the colors of the object groups.
- "Which color graphics have more objects? Which one is less? "

MATERIALS

Yellow, red, blue colored latches and labels of the same color, cardboard

New Words

Graphic

CONCEPTS

quantity: much-little, colors

Evaluation

Children the following questions

- Who created your color boxes ?
What did you do here with the objects you brought ?
- Did you enjoy creating graphics?
- Do you have difficulty creating graphics?
- What we paid attention to when creating the chart?
- We can make charts about other things ?

OTHER RECOMMENDED ACTIVITIES

- • Graphics can be created with different materials in the classroom (such as legos, dolls).
- • The activity may be terminated differently and children may be asked to draw on the paper the graphics they created with the material.
- A chart of the sex of the children in the class can be created using the pictures of the children..
- Graphics can be created by grouping the objects that children bring to their tissues or materials they are using.
- Objects of the same color can be sorted by color tones.

FAMILY PARTICIPATION

- Parents are recommended to create graphics at home with beans, colored glasses or kitchen utensils.

POINTS TO NOTE

- The parents are informed about the event the day before and are kindly requested to guide their children to find objects of the same color as the ratchet color chosen by the children.

How high how low

Activity Category: Mathematics and science (Integrated small group)

The Age : 60-72 Month

OPERATIONAL OBJECTIVES

Cognitive Objectives:

Children guess, object, situation and event (*Kids say tips. Children guess the end with clues.*)

Observations on object orbits.

(Children tell the length of objects.)

Children compare properties of objects or entities.

(Children distinguish, compare, color, size, length of objects.)

Children, objects measure.

(Children measure objects with non-standard units And than they compare the results.)

TEACHING PROCESS

- Kraft paper is glued to the wall of the classroom.
- Children are required to make shadow by moving their body in front of kraft paper. (Lantern is used)
- The teacher says, "Where else are the shadows?" "What else do we need to create a shadow?" and "Where can we find the shadows?"
- They are also asked to make estimates about which methods they can use to create shadows.
- Go out into the open space to create different shadows and create groups of two from the children.
- The shadows are drawn in chalk
- The differences between the shadows are examined at the end of the day. The sizes of the shadows are measured and compared by non-standard units by children.

MATERIALS

Lantern, kraft paper, pencil, stick, chalk

New Words

Shadow, source of light

CONCEPTS

Size: long-short

Children the following questions

- • How and where did we build our shadows?
What we used?
- How to measure?
- How the shadow is formed ? The size of the shadows is the same every hour of the day ?
- Did you find it interesting to work with shadow?
- Which part of your activity did you enjoy the most?
- • Have you noticed your shadow before?
- Now, what things can you see in your classroom shadows?

OTHER RECOMMENDED ACTIVITIES

- Behind a large screen or a white background, children can make shadow theaters using their own bodies .
- They can play each other's catching shadows in music accompaniment .
- Each child may want to select an object and draw its shadow and guess what object the friend is drawing the shadow of.

FAMILY PARTICIPATION

- Different light sources are requested from families before starting this activity (Lanterns, hand lanterns, electric lamps, candles)
- In the evening, at home, in a dark environment with the help of a light source to create different shadows with their bodies to play and to compare these shadows are required.

POINTS TO NOTE

- Care should be taken to keep the light source at different distances while this activity is taking place.
- When shade studies are done, the changes in the shadows should be noted when the light comes from different distances and directions.

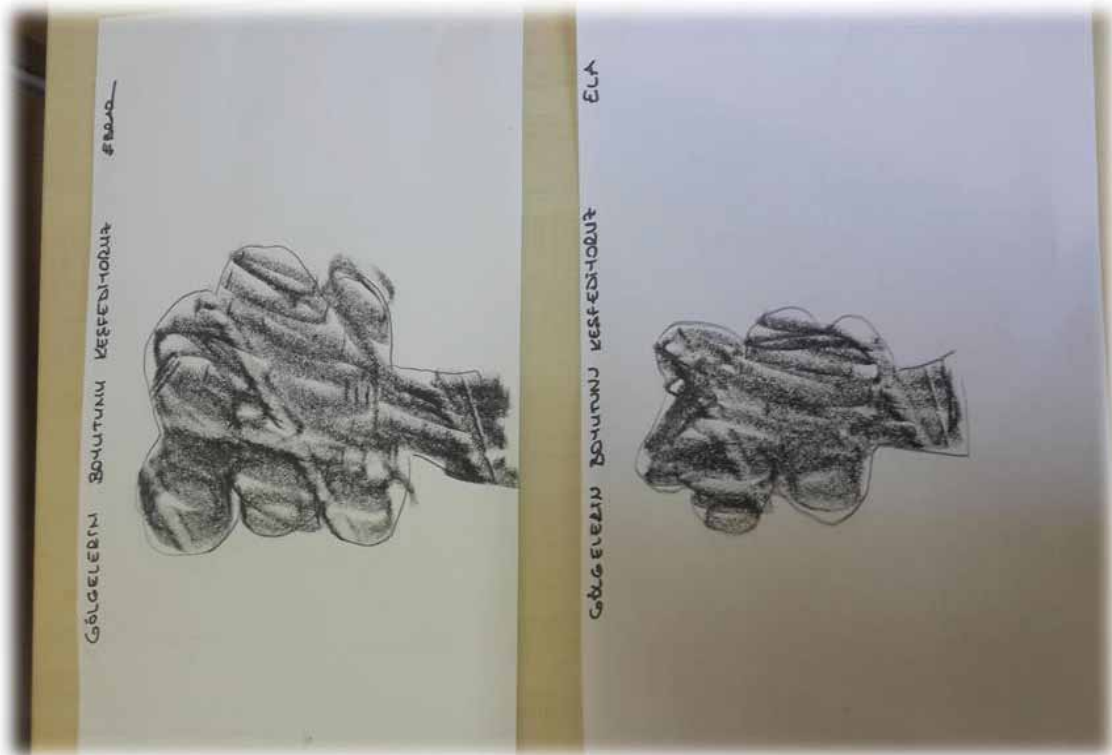
ADAPTATION

If there is a child with mental disability in the class;

- • Hold the child's wrist with mental impairment to assist in the shading of the shadow.
- Simple and short answer questions should be directed to the child with mental impairment about the child whose shade is drawn. Like, "Do you know your friend's name?"

- A child with mental inability may not be able to respond to questions about physical characteristics. For this reason, the conceptual teaching about physical properties (such as length, height, eye color) should be taught.





Italy – Nuova Direzione Didactica – Vasto – Abruzzo

RECIPIENTS: 3/4/5 years old

TIME: November 2016

EUROPEAN KEYSKILLS:

- Basic skills in mathematics
- Learning to learn

FIELD OF EXPERIENCE:

- Knowledge of the world
- The body and movement

DEVELOPMENT SKILLS GOALS:

- The child group and sort by different criteria objects and materials, identifies some properties, compare and evaluate quantities; It uses symbols to record them; It performs measurements using tools within his reach.
- The Child takes pleasure in movement and postural patterns and experiences engines, apply them in individual games and group.

KNOWLEDGE:

- Quantity, height, size.

ABILITIES:

- Compare quantities, heights and sizes. Count and experience the first forms of measurements.

AIMS:

3 years old

- Locate quantity relations (much / little)
- Identifying relationships of size (small / large)
- Locate height relations (up / down)

4 years old

- Identify and classify according to the amount (much / little / nothing)
- Identify and classify according to size (small / medium / large)
- Identify and classify according to the height (up / down)

5 years old

- Classify and perform simple numerical operations with respect to the amount (How much?)
- Classify and perform simple numerical operations in reference to the size (How big is it? What is small?)
- Classify and perform simple numerical operations in reference to atezze (How much higher?)
- Perform first measurements

METHODOLOGY: Playful, discovery learning, group work and individual tutoring and peer to peer.

MATERIALS AND TOOLS: various kinds of stationery (color, cardstock, awls, scissors), clothespins, wire, plugs, pc, cd, building blocks, circles, cloth, toy washing machine.

How much? – Autumn's fruits

In turn, the children choose an autumn fruit among walnuts and chestnuts and place it in one of the two wheels on ground. Then they observe and count the quantities by establishing which of the two circles contains many fruits (nuts) and what little fruit (chestnuts).

Variation: The teacher asks the child to form a small group of4,3,5,7 .fruits, to determine whether it is able to associate the quantities to the required number.





Wash, hang out and count...- how much?

Each child take turns takes inside the washing a shirt or pants and goes to lie down on one of the ropes specially crafted. Subsequently the children count the number of clothing hung out and discriminate quantities: so many sweaters, short pants, a skirt, no scarf. Finally to consolidate the experience, register on the precise number of billboard hanging clothing.

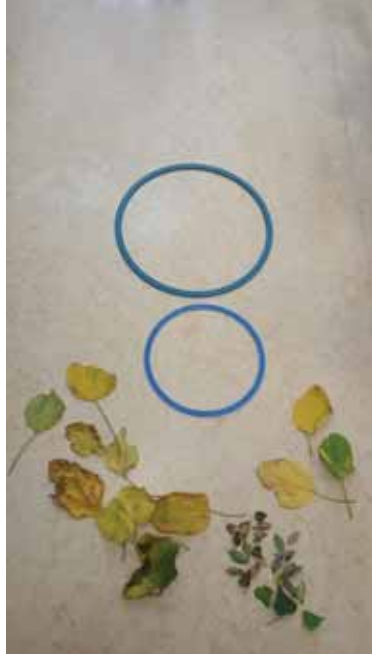






How small? - “autumn elements”

In order to attract their attention and develop their curiosity, we asked the children to bring to school leaves and pine cones of various sizes, after which we set up of circles, some big, some small.



The delivery date has been to set up larger leaves and pine cones in the large circle, smaller leaves and pine cones in the small circle; After you finish placing objects, he was asked the children to count the elements in sets, then indicate what was the major and along which the smaller set.





COLOR ONLY BIG CHESTNUTS

"Let's play with the sets"

Children aged 4 and 5 have also made some games also combining the numbers, always looking for young and old has been given a specific delivery, you had to take 5 or 10 caps, all the same color and the same size (large, small) , and place them in the circles that the teacher stated at the time (big or small circle circle), or large circle positioned high above the table or small circle positioned low to the ground.

Other recreational activities were carried out with the rulers, before the children were free to play with it as they pleased, after which it is given to them a specific delivery: build a tower: from the smallest piece that corresponds to the number 1 for the largest piece which corresponds to the number 10, and then vice versa, from the largest to the smallest piece part. All children have responded to the activities proposed in a positive and proactive way.



HOW LOW? HOW HIGH? “Gulliver’s adventures”

We started from the story "Gulliver’s Travels", of which we read a summarized version and adapted the first two trips. Subsequently, with a guided conversation, the children were encouraged to imagine, infer, think about the story, focusing on the different heights of the characters and how Gulliver, while never changing its size was a giant high for the inhabitants of Lilliput and instead a tiny little man for the people of Brobdingnag. We then moved to a dramatization of the story, using fabrics and ribbons to make simple costumes.



Gulliver in the island of Brobdingnag



Gulliver with the Emperor of Lilliput



After the dramatization:

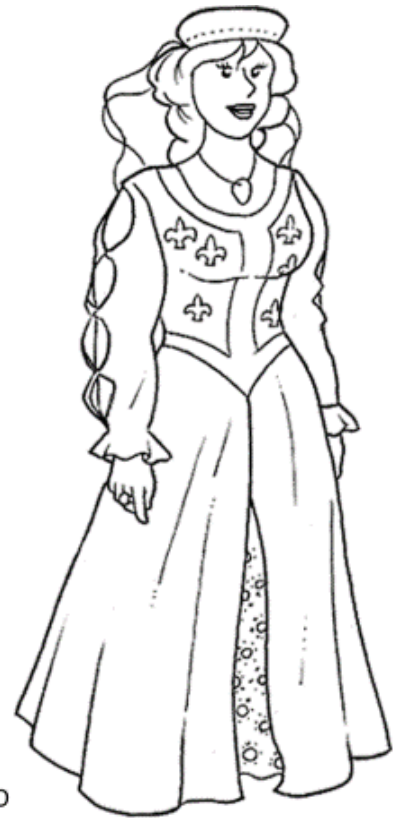
- 3 years old children old and have a card, depicting Gulliver and the Emperor of Lilliput where they had to paint only the highest character.
- 4 years old children and colored, cut and pasted the protagonists of the story, from lowest to highest.
- 5 years old children , in addition to the 4 years card, have drawn and colored Gulliver and the emperor of Lilliput, as well as to consolidate the high-low concept, to know how to use the space adequately.

GULLIVER



ATTIVITA': COLORA SOLO IL PERSONAGGIO PIU' ALTO
OBIETTIVO: PERCEPIRE LA DIFFERENZA ALTO-BASSO

I VIAGGI DI GULLIVER



ATTIVITA': COLORA RITAGLIA E INCOLLA I PERSONAGGI DAL PIÙ BASSO AL PIÙ ALTO

OBIETTIVO: RAFFORZARE IL CONCETTO DI DIVERSITA' TRA ALTO E BASSO



HOW LOW? HOW HIGH? “how high?”

We put the kids in circle time inside the classroom. We place at the center two circles, one green and one red, and the building bricks of different sizes.

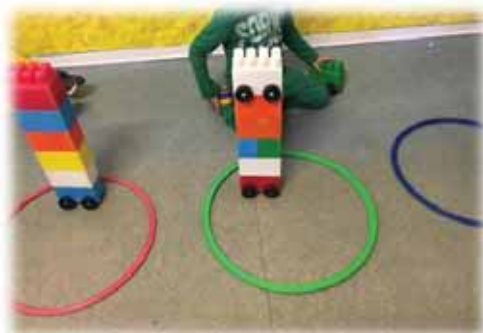


We call one child at a time and ask you to build a tower in the green circle and a low in the red; the next child ask you to do the opposite, a low and a high in the green circle in the red.



Once you make this simple operation for a while we add a third blue circle by placing it next to the green circle that remains at the center of the three circles. In the central circle of average build a tower height and ask the children one at a time of initially build a tower higher than that date, then a lower and finally try to build three towers of the same height as placing a limit: the use of the same pieces of construction used until then.

One of the children initially by reference to the date builds a tower of the same height but leaving only a few pieces for the third tower is not sufficient to reach the height of the other two. At this point the companions reflecting help him in suggesting reasoning to disassemble the towers already constructed to redistribute the pieces in equal parts.



How high? How low? - “How much we are high?”

We present them with a white blank billboard and are standing on the ground by inviting the children, one at a time, to lie down on it to "be measured."



Once we measured the height of each outline of the columns corresponding to each child that are subsequently colored with the paints by the same who choose the "right" color in order to identify the column corresponding to their height. Later we moved from the classroom to the gym and we bring with us the billboard created with children and, after we settled we do to children of questions to bring them to reflection:

- **What have we done?**
- **Which means we have measured?**
- **What we see on the poster?**

After playing reflection we give children the building blocks and ask them to put as is necessary to reach the height of each one so you can count together and see "how many bricks are high?", Well this is done to a child time.



Concluded this stage we ask the children to stand in line from lowest to highest child and together we see that some children are more or less the same height. To check understanding of the high and low concept we do have specific questions such as "Who is the lowest? Who is the tallest? Who are the children of similar height? ".



As a last step of asking the children to graphically represent their height coloring the exact number of bricks that were used in the previous phase and writing next to each brick the corresponding number.

How high? How low?- “The heights in nature”



We invite the children to take a walk outside and look in particular the trees. We pause to talk about the differences in height between the various trees that we see and then we return to the section. Once back, we propose the children to draw freely trees of various heights and once completed, to cut them out. Finally we paste in the group all the trees on a billboard in descending order.





Finally, we prepare with the kids a plastic trees of different heights.



Estonia – Sillaotsa School – Haaslava Parish, Päkste village – Tartu County

November 2016: *HOW HIGH? HOW LOW? HOW MUCH? HOW LITTLE?*

This is the second standard gain in the “Good Start, Grow Smart” that introduces our child to how mathematicians determine the height, length and width of objects.



Integrated learning areas:Mathematics

Age of children:6

Topic: *HOW HIGH? HOW LOW?*

Needed learning materials:stones of different sizes

Learning Objectives:Child ranks 5 objectives by size

Learning activities:every child has 5 different stones

- ❖ place the stones so that the lower one is the biggest
- ❖ place the stones so that the lower one is the smallest
- ❖ display the stones from the major to minor
- ❖ display the stones from the minor to major



Integrated learning areas:Mathematics

Age of Children:4-5

Topic: *HOW MUCH? HOW LITTLE?*

Learning Objectives:children compare numbers that are more than or less than numbers 1-10.

Needed learning tools/materials:Pictures of animals and cards with different numbers.

Learning activities:There are pictures of wildlife on the wall (bear, fox, wolf) with a number and the same number of dots on the picture. There are small cards of the same animals on the table. A child takes a card from the table and has a look what animal and number are on the card. Once they have identified what is on the card they find and match it with the picture on wall. The small dots help children who do not know numbers yet and the teacher can help them when they see them struggle. Children pick up and match the cards until there are no more cards on the table. With the teacher the children compare the cards on the wall and see which picture and number have the least card



Bulgaria – CDG 29 “Lubimka” – Dobrich

“How high? How low? How much? How little?”

Objective:

Comparing objects in certain dimensions and use of relevant terms.

Expected results:

Distinguishing spatial dimensions of objects using specific practical techniques for comparing.

Group I / 3-4 years /

Practical examines the height of objects.

Determine equal in height objects. Expected results by age groups.

Group II / 4-5 years /

Named shows and length of objects using long, short, longer, shorter. Arranges three items in ascending and descending order of height.

Group III / 5-6 years /

Named and shows the width of the subject.

Arranges five items in ascending and descending order of height or length.

Measure the length, using the "strip" or other object.

Group IV / 6-7 years /

Compares objects by their attributes: length, height and width.

Arranges three items in ascending and descending order of height, length or width.

The place of the missing object in serial row.

Selects the measure (subject) to measure the height, length and width.

Compares the weight of items during games, using light / heavy.

Theme: “How high? How low? How much? How little?”

Educational field: Mathematic;

Educational kernel: Measuring;

Kind of the lesson: Base form of pedagogical interaction;

Group: 2nd group “Sunshine”

Children’s age: 4-5 years old

Aims: Formation of elementary notions of spatial dimensions;

Educational tasks: Encouraging skills for measuring quantities in a parameter. Stimulating development by sight when determining the dimensions of objects;

Expected results: Compares group objects. Discovers similarities and differences. Recognize and name specific dimensions;

Methods: talk, demonstration, exercise, game;

Forms of work organization: frontal, individualized and group.

“Every tree in its patches”



Type: group

Cognitive task:

Consolidation
grouping size of
objects.

Game task: Children
placed high trees in
one bed and low trees
in the other bed.

Materials: tall and
large tree made of
cardboard, patches

Game rules: Each
child takes and puts
the tree in the field,
depending on its size.





Mobile Game: "Trees"

Goal of the game: Develop the speed of motor response and children's attention.

Preliminary preparation and organization: The children are in a scattered pattern facing the teacher.

Game rules: The teacher says: "Trees are all different" and begins to give verbal signals where children need to quickly take a proper imitation.

"High" - balanced standing on fingers, hands up;

"Low" - squat and support squat;

"On a thin stem" - equilibrium standing on one leg;

"On a thick stalk" - a half-crouch in a crouch, hands away;

"Bent" - a stack of support.

Methodological Guidelines: Signals are given quickly. The teacher can also make misleading movements.



“Compare and sort”

Type: individual

Cognitive task: Counting. Quantitative comparison.

Comparing the height and alignment.

Game task: Children have to count and compare houses and the Sourvakars.

To color the trees that are away from children.

To set point below the highest child.

Draw a circle above the lowest child.

Survachka to stack in ascending order.

To color the lower tree.

Materials: individual sheet for each child, glue, color pencils;

Game rules: Every child performs successive instructions of the teacher.





“Each ribbon on its box“

Type: individual

Cognitive task: Comparing a group of objects in length and size.

Game task: To tie each box with a ribbon according to color and size.

Materials: different color and length ribbons; different color and size boxes.

Game rules: Children compare and distributed ribbons in color and length. Compare them to the size of the boxes.



“River and bridges”

Type: group

Cognitive task: Consolidate the knowledge and skills of children for comparing objects in length and width

Game task: Pass cross the river by placing bridges

Materials: decorated cloth-mimicking river, two bridges boards, badges for children

Game rules: Children compared the river width. Place short board on the narrow part of the river and the longest board of the general. Children crossing the river bridges the color of logos.



France – École Les Moulins – Barbentane – Provence, Alpes – Côte d’Azur

The measuring rod

(discovering sizes « How tall »)

5 years olds

To explore forms, sizes, organized suites

To order and rank objects depending on criteria of length or weight or capacity

1st SESSION

Organisation :

- Tutorial with 8 children
- In the motor room or in the classroom
- **The measuring rod...phase 1**



Three children are placed along a wall, ranging from the shortest to the tallest child, leaving space inbetween and on each end.

The teacher calls two classmates and asks the second one to place the first one at the right place. The former is then placed by another child and so on.

Each child must remember the classmates right next to him/her on either side (the shorter one and the taller one), but not those at the two ends.



⇒ **The teacher must act with delicacy so as not to hurt the children's feelings.**

⇒ **Vocabulary: shorter than, taller than, same size as**

➤ **The measuring rod...phase 2**

The line-up of the children is recreated in the classroom with the help of name tags (first names). One by one the children place their name tags according to the line up in the previous room.

⇒ **Two representations: one close to reality, the other more symbolic.**

⇒ **Vocabulary: between**

➤ **The measuring rod...phase 3**



The line up is recreated physically and validated by a list

The children turn 90° in order to form a train, from the shortest to the tallest.

Verbalisation «who is taller than...?», «...shorter than....?»

A child faces the train: What does it see? The children each turn 180° in order to see the train going from the tallest to the shortest child.



- ⇒ **Written words as memory aid, allows to validate**
- ⇒ **Other perceptions of order**
- ⇒ **Vocabulary: taller than... shorter than, in front, behind**
- **The measuring rod...phase 4**

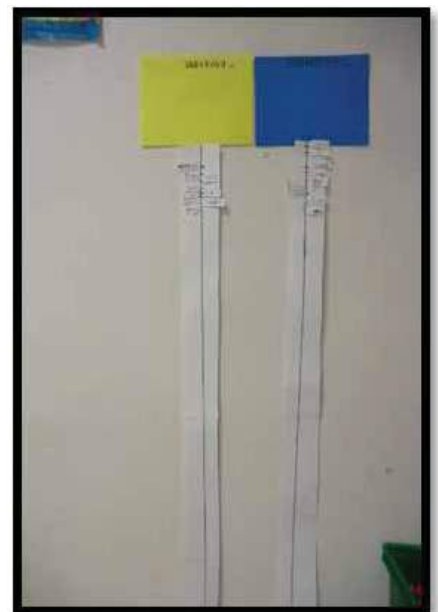


Construction of a measuring rod. Each child is marked on a vertical strip with the help of a small line and its name tag



1 measuring rod per group

1 colour per month (legend)



⇒ Children discover a social object: the vertical measuring rod

2nd SESSION

➤ The measuring rod...phase 5 : «A strip for my height».



The teacher cuts a strip the length of each child's height.

Each child has to find its strip and fix its name tag or write its name on it.

⇒ Several procedures: direct comparison (I / my strip) or comparison with an intermediary reference (my strip, my mark on the measuring rod)





⇒ **The alignment of the strips is the same as for the children (whose strip is the one between x's strip and y's strip / which strip is longer than x's strip... smaller than y's strip**

➤ **The measuring rod...phase 6**

The measuring rods are looked at again several times throughout the year in order to observe that all children have grown, that the order has changed...

➤ **Reinstatement**

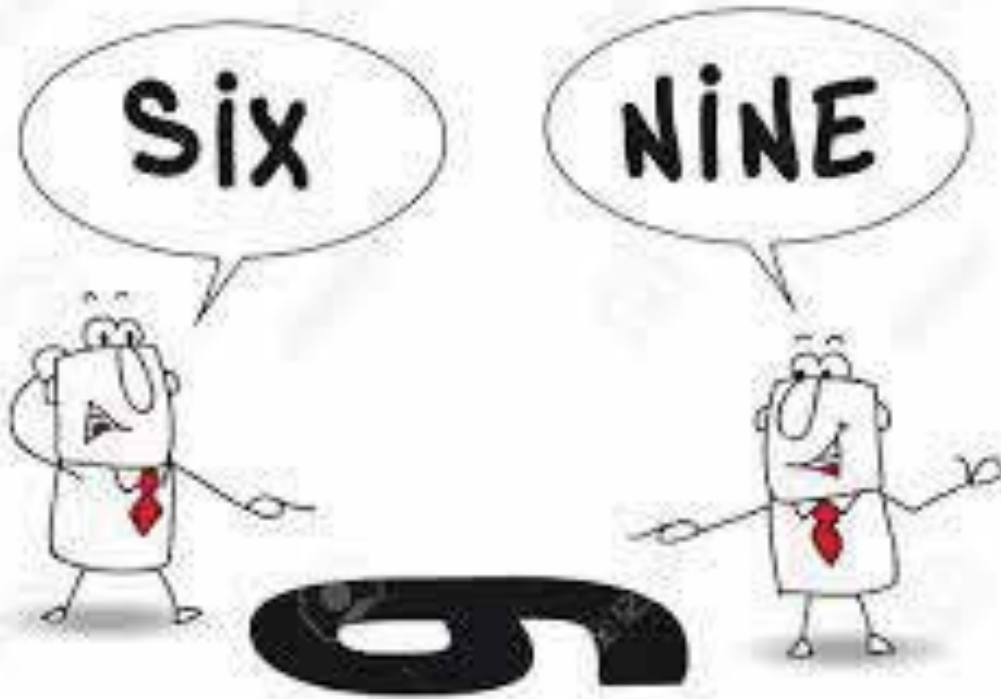


Russian dolls are placed according to their size.



WHAT'S YOUR ANGLE ON THAT?

December 2016



Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj

Level: II

The Age of children: 5-6 years old

Theme activity: What 's your angle on that?

Fields of activities involved: Math, Arhitecture, Art, History, Building Games;

The type of activity: systematization and verification of knowledge;

Interdisciplinary activity;

The method of achievement: Mathematical game, Building games,

Practical work, Painting,

The purpose of lesson:

- Looking at the world through a scientific and mathematical lens;
- Making connections in their lives between math, arhitecture, history, art and other disciplines;
- Practising operations mathematical thinking;

Operational objectives:

- **cognitive objectives:**
 - to be able to notice the architectural monuments of Constantin Brâncuși and the other arhitectural buildings from the city;
 - to find out about the history of these monuments;
 - to be able to identify the shapes that the sculptor used in his works of art(circle, semicircle, triangle, rectangle, square, rhombus)
 - to be able to describe the characteristics of the shapes used in the games and activities (form, size, colour);
 - to be able to build, to paint and to stick different shapes to get final products of their work;
 - to find and to describe geometric shapes in architecture;
 - to count the shapes used by children to build each arhitectural monuments;
 - to use spatial vocabulary (left, right, above, below) to describe relative position;

- to use the language of mathematics to express the mathematical ideas;

➤ **psychomotor objectives:**

- to handle different kind of materials used in their works;

➤ **affective-motivational objectives:**

- to participate in the game and activities with pleasure;

- to cooperate in the group activities, to communicate with the other students in the games to obtain the final product;

Teaching

strategy:

Methods and processes: observation, conversation, explanation, demonstration, exercise, questioning, analysis of the final products;

Material resources: geometric figures, wood cubes, lego, wood sticks, paper, glue, brush drawing, watercolors;

Type of organization: front and workshops;

Resource time: 35 minutes for each activity;

TEACHING SCENARIO

In a beautiful day of winter, the teachers and the children went in the Central Park to visit the architectural monuments of Constantin Brâncuși. From the beginning they observed each monument and the teachers explained the historical meanings of these. The Sculptural Complex of Brâncuși is dedicated to the heroes who died in The First World War, trying to defend the city Târgu-Jiu from the Germans.



After this, the children had to identify the shapes from the monuments.

On the Kissing Gate they discovered the semicircle, circle, rectangle and lines who separate these shapes. The students counted these shapes.

We crossed by the Kissing Gate – the symbol of marriage and the beginning of a new cycle of life, the passage to another world.

The Kissing Gate



Then we walked on the Chairs Alley and the students had to count the chairs placed on the left and on the right road.

The Chairs Alley



To the final road we discovered the Table of Silence. It symbolize the birth.

Together we identified the form of the table and the chairs (circle), also their number (12 chairs situated at equal distance one from the other). The name of chairs represents actually a sacred reality: the sandglasses measuring the passing of time.

The Table of Silence



We crossed the city and finally we get to the Endless Column, last monuments from the Way Heroes. It symbolize the passage to the afterlife.

The Endless Column



Children made a circle around the column with their arms and bodies. They looked to the sky and they notice that the sculpture is very, very high. It was difficult to count the number of the shapes (17 rhombus).



When we came back to the kindergarden we looked to the buidings from the city and we analized them(form, high, size).



After the trip we applied in the activities(workshops) all what we found out about the architecture of our city.

PRACTICAL ACTIVITY WORKSHOP

The first group applies the knowldge combining math with practical activity, using the shapes made by paper. The children try to build the monuments of Brâncuși assembling the correct forms.

Objectives of this activity:

- To identify the materials used in the activity: paper, paper shapes, glue:
- To name the shapes and their characteristics (form, size, colour, number);
- To build the monuments of Br ncuși using the paper shapes.

Task 1(The First group): Some of the children have to obtain the Endless Column. They recognize the forms, they count them (17 shapes) and, after these, they stick them together on a piece of paper. Finally they put all the practical works together.



Task 2(The Second group): On the other table students work to make the Kiss of the Gate. They have to identify the elements and put them together (rectangles, circles, semicircles).



Task 3(The Third Group): The last group work to build the Table of Silence. They put in the middle the table, a big circle, and twelve little circles around it.



The students obtain the final products.



BUILDING GAMES WORKSHOP

The groups on these workshop will have to apply their mathematical knowledge in building games. They use geometric forms, wood cubes, lego, wood sticks to build the sculptures from the Central Park and the city's buildings.

Objectives of this activity:

- To notice the images and the miniatural sculptures ;
- To identify the different kind of pieces used in building game;
- To describe their characteristics(form, size, colour, thickness);
- To compare plane geometric shapes with elements from geometry in space, by common attributes (shape, size, number of corners);
- To count the pieces, reporting quantity to a number and recognize „how many" elements they used in each building(up to 20);

- To assemble the elements to build monuments they saw;
- To form the entire using an equal number of small elements;
- to measure using non-standards units of measurement (use cubes to measure the block's heights, use geometric shapes to measure the height's column);
- to understand how mathematical ideas interconnect with the architecture;

After this they identify the monuments from the pictures and the miniatural scuptures, the students recognize also the different geometric shapes carved on the monuments.



Task 1(The First Group): The children have to build them. Finally, they describe geometric shapes(form, size, colour, thickness) and count the elements that was used in each building.They represent numbers of elements using tokens and form entire with equal small parts.



Task 2(The Second Group):The students build the same monuments using another kind of geometric forms and wood stick. They have the same tasks: to describe, to count the elements and to associate with a number.



Task 3(The Third group): The children use lego, wood cubes and plastic cubes to restore the hall of the town and other buildings. They measure using non-standards units of measurement (use cubes to measure the block's heights), describe and compare the measurable properties of length (shorter, longer, taller).



Finally, together they assemble small geometric shapes to realize the entire Sculptural Complex of Constantin Brâncuși, pursuing the same objectives of activity: to compare shapes (form: circle – semicircle- rectangle- triangle- rhombus, size: small-big, colour: yellow-blue-orange-green-red) and to count them.



PLASTIC EDUCATION – PAINTING WORKSHOP

- OBJECTIVES:
- 1. To name the materials received;
- 2. Painting given topic using techniques appropriate work;
- 3. To develop their imagination;
- 4. To do the works correctly and clean;
- 5. to use different geometric shapes in their paintings for restore the sculptures;
- 6. To tell what shapes they used in their paintings;
- 7. To recognize the colours of that geometric shapes and their number;
- 8. To express their opinion towards their own work and to the work of others, citing this opinion.

MATERIALS USED:

SHEETS,

WATERCOLORS,

PAINTBRUSHERS,

WATER,

NAPKINS.

The children watch a movie about Constantin Brâncuși and the representative works which are in our town.



- The children sit at the tables.
- Then, kids intuit materials received and call them and they say to me, what they do with this?
- I will communicate to children that will be painted: The Infinity Column, The Table of Silence and The Kissing Gate.
- We heated small muscles of the hands by performing exercises
- Using geometric figures, the children painted the three targets



We made an exhibition with these pictures in our class.



Age Level: I (4-5 years old)

Annual Theme: Who am I/ are we?

Project Theme: “Me and my world”

Activity Theme: “My city”

Activity Type: Checking and consolidating knowledge and skills

Organization Form: Integrated activities – Personal Development Activities + Freely Chosen Activities + Experiential Domain Activities (Scientific Domain)

Duration: One day

Personal Development Activities: Morning meeting: “ I’m proud of being a Târgu-Jiu citizen”

Transitions: “City bus travelling”

Freely Chosen Activities: Scientific field: “Place me in my house” – logical game

Experiential Domain Activities: “My city”: Art, constructions, tabletop game

Didactical Purpose: Child stimulation and development of mental processes of knowledge and some qualities of them: observation spirit, visual memory, analyze, synthesis, voluntary attention. Children’s socialization via semi-directed activities which fix accumulated information and prepare future activities;

Operational Objectives

- Knowing social and cultural medium elements, placing the city and country as an integral part of the medium
- Enriching sensorial experience as a base for mathematical knowledge referring to recognizing, naming objects, their quantity, classification, forming groups, arrays, based on common traits(form, size color)
- Naming the pieces with the 4 attributes correctly (form, size, color, thickness).
- Naming the relative spatial position which the groups occupy to one another (left-right, front-behind).
- Forming groups by the form criterion.

FREELY CHOSEN ACTIVITIES

- **Art:**
- **Working tasks:**
- -Combining cut geometrical pieces correctly for displaying city images
- -Orienting in the working place for realizing a painting
- -Working correctly and clean, using learned working techniques
- **Constructions:**
- **Working tasks:**
- -Describing, using construction, aspects of the past and present city
- -Building small and big flat buildings
- -Interacting with game partners
- **Tabletop game:**
- **Working tasks:**
- -reforming images of the city of Targu-Jiu, using geometrical pieces
- -knowing the work of art realized by Brâncuși

- **Didactical Strategies:**
- a) **Methods and procedures:** conversation, explanation, demonstration, exercise, individual work, in small groups, learning through cooperation.
- b) **Materials:**
- -**Art:** sheets, glue, colored sheets;
- -**Constructions:** Lego kit, cardboard tower;
- -**Tabletop game:** ARCO kit;
- **Organization form:** individual, up front, small groups
- **Evaluation:** continuous

Didactic Scenario

In the classroom, the children form a semicircle. The teacher greets them by saying “Good morning, dear Targu-Jiu citizens!”. She asks them if she greeted them correctly and why. After that, they will make the presence and the nature calendar will be completed with the dates (season, year, month, day) and the weather condition.

The teacher announces the children that she has a surprise for them: a movie about the city of T argu-Jiu from the past and present. They will watch the documentary movie about the city together.

- The children will express their own opinions and emotions about what they watched.
- The teacher will propose them to play the logical game “Place me at my house”
- The children are placed on chairs, in a semicircle. On the ground, the houses are drawn in the shape of a rectangle, circle, square, triangle. They can also use figures made out of malleable wire of the same color. In the beginning of the game, the logical-mathematical kit is presented, the correct size of the pieces is specified and then the houses row is observed.
- The game procedure is explained: The square group is separated, and it settles at the square drawing, and then the other groups.
- Questions are asked: “-How many groups did we form? How many houses do we have? Where is the square group placed? Which groups is to its left? Which group is the closest to you? Where is the rectangle group? ...” While the children close their eyes, the teacher changes the order of the houses, the pieces remaining in their places.
- The children are in the situation of observing the change that was made and to restore the initial situation.
- “Let’s climb in the bus and make a tour of our city!”At the first station, the **Constructions** center, they will build big and small flat buildings of the past and present city.



At the next station, the **Art** center, they will create a picture of the city out of geometrical pieces.



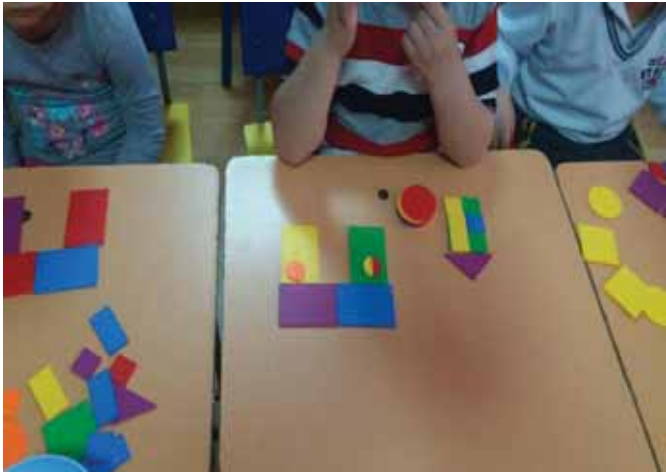
At the last station, the **Tabletop** center, they will make buildings using 2D pieces of the city, especially Brâncuși sculptures.



The children settle at the centres and start working.

CONSTRUCTIONS:





ART:



Turkey – Sehit Anil Eruluc Kindergarten, Salihli, Manisa

Activity Category: Visual arts (Large group)

The Age: 60-72 Month

OPERATIONAL OBJECTIVES

Cognitive Objectives:

The kids get in the piece-whole relationship. (*Kids combines the piece and get a whole.*)

Social emotional development:

Children express themselves in creative ways

Motor Development:

To develop small muscles (short objects:over the top, side by side..)

TEACHING PROCESS

- Students make three-dimensional work with different tools.
- Shapes are observed from different angles.
- Talk about what the shapes look like.
- Differences between shapes are observed

FAMILY PARTICIPATION

Parents are asked to do the same at home with their children.

MATERIALS

all shaped Legos in class

New Words

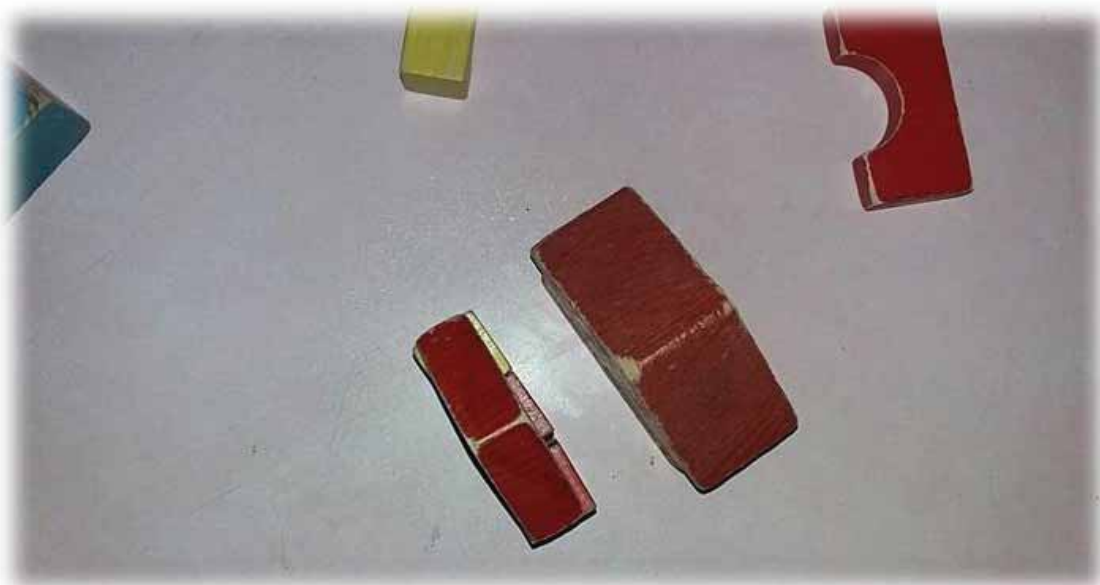
Block, lego, shape, construction

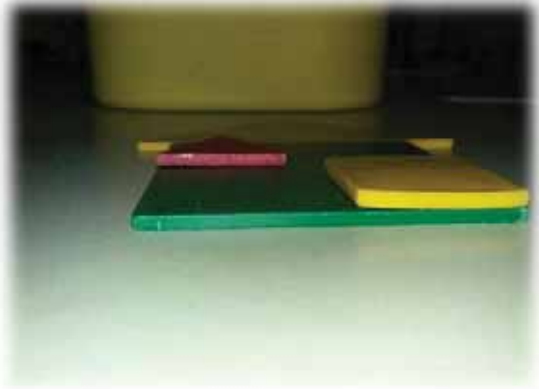
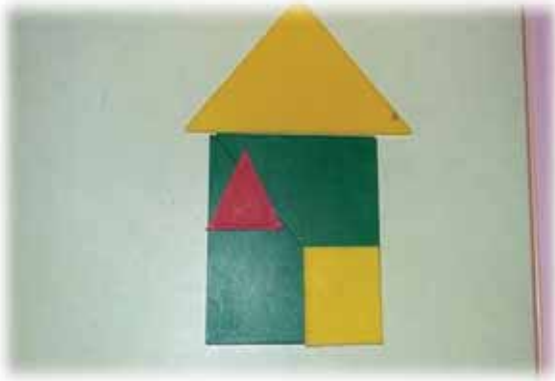
CONCEPTS

Size: part-whole Triangle, square, circle

Children the following questions

- What you used?
- Do shapes resemble each other?
- Did you find it interesting to work with shapes?
- Which part of your activity did you enjoy the most?
- What does the resulting product look like?
- Now, what things can you see in your classroom shapes?







Italy – Nuova Direzione Didactica – Vasto – Abruzzo

RECIPIENTS: 3/4/5 years

TIMES: January-February 2017

EUROPEAN KEY COMPETENCES: Basic skills in mathematics. Learn to learn.

FIELD OF EXPERIENCE: Knowledge of the world. The body and the movement.

DEVELOPMENT SKILLS GOALS: The child groups and orders by different criteria: identifies some properties, compares and evaluates quantities, uses symbols to register them; Perform measurements using tools at its reach.

KNOWLEDGE: The different geometric shapes

ABILITY: Recognize, classify, group, order, count, and reproduce the main geometric shapes.

AIMS:

3 years old

. Make first simple classifications. Locate quantity ratios (big-small, little-so ...). Identify in reality and recognize the main geometric shapes (circle, square, and triangle).

4 years old

Group, compare, and sort objects. Classify based on: color, shape and size. Recognize, locate and reproduce geometric shapes.

5 years old

Know and work with quantity, compare and order objects. Recognize and represent the main geometric figures. Obtain the features of the objects. Perform classifications and rankings.

ACTIVITY

To introduce children to the study and discovery of geometric shapes, we bring the children to the school's gymnasium where we form, through the four-form materials, the TRIANGLE, the SQUARE, the CIRCLE and the RECTANGLE. Next we sort them in line.



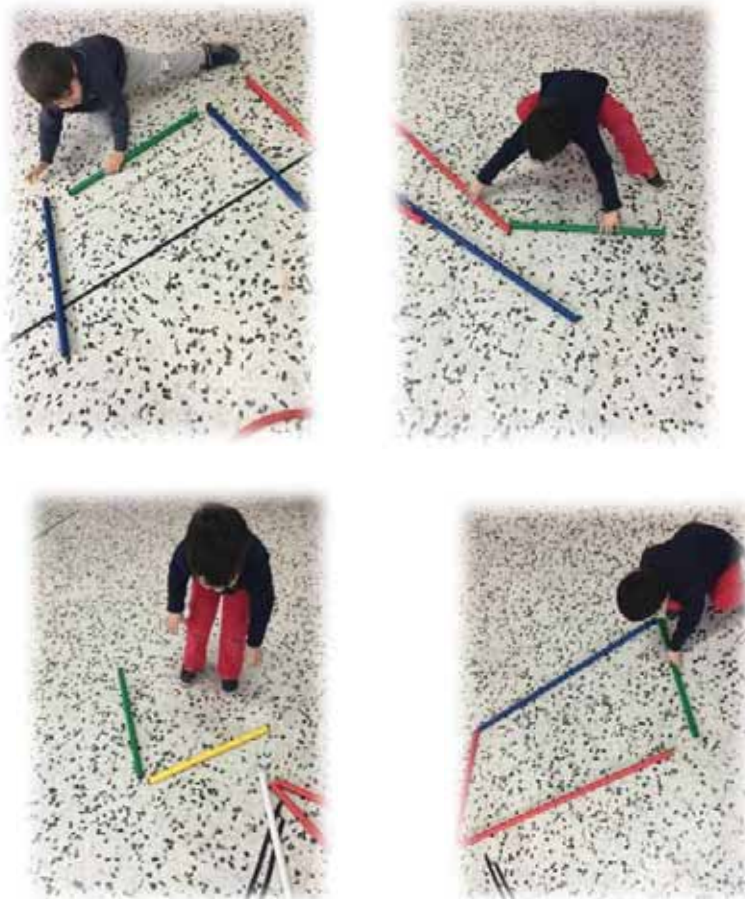
We ask the children to tell us first what those strange figures were created by the teachers; All the children respond in chorus to the name of all the figures. To make sure all the children know about the exact name, we ask one at a time to jump into one of the figures. Once all the children have made the request, we ask, from five-year-olds, to disassemble one to one of the figures, thus obtaining simple rods arranged side-by-side. To avoid confusion, do this one step at a time, starting with the Square. Children count how many rods make up the square (4) and notice that all are of the same length. Then they go to the triangle, three auctions in our case are the same. The Rectangle, again four auctions, but this time two longer and two shorter.



Once we split the shapes we began to reflect on the differences between them: the triangle is composed of three rods and therefore has three sides, the rectangle and the square are composed of four rods and therefore have four sides but are equal? The rectangle has two sides longer and two shorter while the square has four sides all the same ... And the circle? This form does not have "sides" with respect to the others but a continuous line that finally closes.



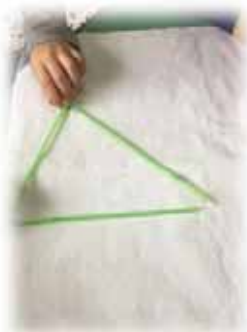
The third task was to reconstruct the shapes properly.

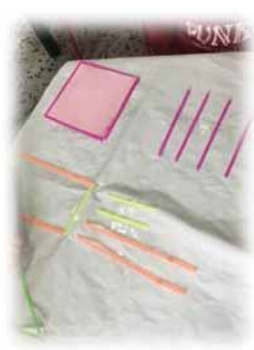


Observe and experiment the shapes with objects, let's experience them with our body and thus playing we create a circle, square, rectangle, and triangle.



Once this activity is finished in the gym, we return to the class where a white billboard, straw, wool, color and glue was previously placed. Let's go back to the billboard for the tried-and-tested forms, but how? Through the straws that simulate the auctions used earlier in the gym: we prepare for each shape the number of needles needed to build it and the same number of straws to put next to the figure created, which remembers how many sides is composed that figure and how are they those sides (equal, longer, shorter, ...).





During the "manipulative-creative" workshop, to the **3-year-old children** are offered a salt-pasts handling activity with which children have made geometric shapes (circle, square, triangle) using them to make squares after painting them.



4-year-old children during the "Fairy Tales" lab after listening to the fairy tale "The Four Cities of the Sea" dramatized and made the group of four cities on a billboard.

5-year-old children at the fine motricity laboratory are offered a cut-off activity of 4 geometric shapes (square, triangle, circle and rectangle) of different sizes. After cropping the children, they

place them together by formatting them. The teacher raises questions at this point to provide reflection on the possibility of creating objects joining various forms After the discussion is prepared a piece of paper parcel to let children create, they invented "The City of Shapes"

After addressing the theme of school forms, we have decided to "go out" to see if in our daily lives there are our beloved forms! We went to see the Church of San Lorenzo (the exterior): the walls, the windows, the floor, the doors, all forms! The children first identified the rectangular and square windows in the building, and then the upper part of the doors formed by a nice triangle.



The only form missing in the building is the circle and the kids notice it right away, then at this point we are all together creating a big circle in front of the building.



Estonia – Sillaotsa School – Haaslava Parish, Päkste village – Tartu County

December 2016: *WHAT ' S YOUR ANGLE ON THAT?*

This is the third standart gain in the “Good Start, Grow Smart” that builds our child 's foundations for this branch of mathematics and for success in many professions, from construction and industrial design to the visual arts.

Integrated learning areas: Mathematics

Age of children:6-7

Topic: *Building games*

Learning Objectives: construction of the building that is on the picture cooperates with others and and is able to consider for others

Needed learning materials:various tools for building.Plastic and soft blocks, legos etc. The printed image of The Eiffel tower .Papers for drawing

Activity description:construction of The Eiffel Tower according to the picture. 5 groups of children.

Group nr 1 legos (red, blue and white) Group nr 2 plastic blocks

Group nr 3 soft blocks

Group nr 4 legos (all the other colours)

Group nr 5 creativity: different building materials from the room.





Bulgaria – CDG 29 “Lubimka” – Dobrich

“What’s your angle on that?”

"Our street“

1. Transmitting spatial-constructive relationships between known objects of reality.
2. Enriching visual ideas and developing reproductive ideas.
3. Applying different construction images in a certain space.

Preliminary preparation:

Targeted observation of a suitable architectural motif from the place of birth, photos, illustrations.

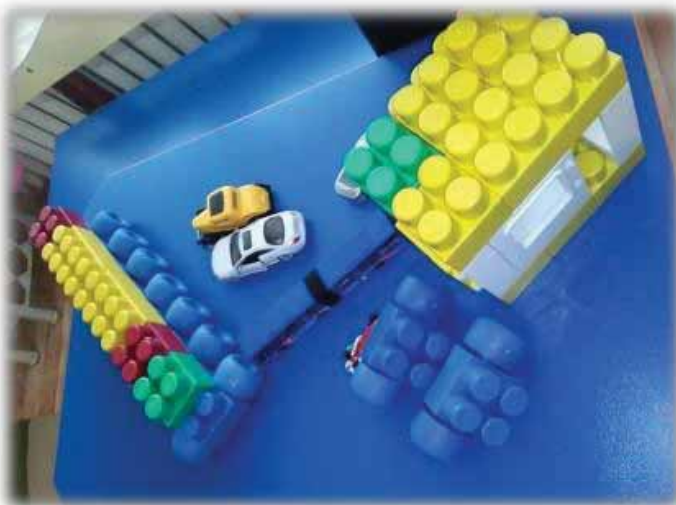


Counting, comparison to application of various size, shape and color of buildings.



Constructive play

Constructs objects of near reality in space.



It defines constructive activity as an independent creative game.



Consolidate the knowledge and skills of children for comparing objects in height and length.



Organizes the construction model in a role-playing game.



*France – École Les Moulins – Barbentane – Provence, Alpes – Côte
d'Azur*

Geometric forms and architecture

(Hundertwasser)

3/4/5 years olds

Mobilising language in all its dimensions

- expressing oneself in a syntactically correct and precise manner
- practicing diverse usages of oral language: describing, explaining, expressing an opinion

Building the first tools (forms)

- classifying objects according to their form
- knowing the names of some flat forms (triangles, circles, squares, rectangles).

Acting, expressing oneself and understanding through artistic activities

- choosing different tools and media within a project and using them by adapting one's gestures
- producing artistic compositions alone or within a small group by combining different materials, by reinventing techniques and methods
- describing a picture and expressing one's feeling or comprehension
- building up an art culture

SESSION 1:

Organisation :

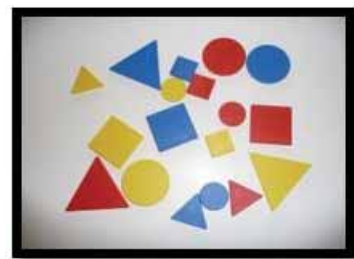
- Group of 6 to 9 pupils. Provide for considerable working space for each pupil.

Objective:

- creating a construction with the help of geometric forms

Material :

- geometric forms



➤ Step 1: constructing with simple forms



Playing with the forms on a table.

Building a construction or assembly alone or within a group

➤ Step 2: sharing



Presenting one's construction.

Naming the forms used if known.



Renaming the collections and showing and observing them.



➤ **Step 3: respecting the instructions for assembly**

- choosing a particular form and naming it; making an assembly using only the form chosen
- creating a flat assembly by using only square and triangular shapes
- producing a piling-up using only one type of shape

⇒ **The different creations are photographed. The photos are displayed and, after having chosen the most feasible ones, are used at the beginning as assembly models.**

⇒ **Vocabulary: nouns (square, triangle, circle, rectangle), verbs (set, build up, touch, make it touch, assemble), adjectives (colours, small, big).**

SESSION 2

Organisation :

- Whole class

Material :

- reproductions, photos, images of urban buildings (approximately 10)
- reproduction of buildings designed by Hundertwasser

For example :





Hundertwasser 1



Hundertwasser 2



⇒ **Observing the pictures:**

What can we see?

What is it?

How was it built?

⇒ **Vocabulary: town, houses, buildings, tower, street, cars, doors, windows, apartments, colours**

SESSION 3

Organisation :

- Group fo 6 to 7 pupils individual work

Material :

- boxes of different sizes
- paint
- scissors
- glue
- dice of forms (squares, rectangles)
- dice of colours
- glue varn
- square or rectangular windows (to be cut out by the pupils of the second year, already cut out for the pupils of the first year)

➤ **Step 1**

- choosing a box and painting it with one of the suggested colour

➤ **Step 2**

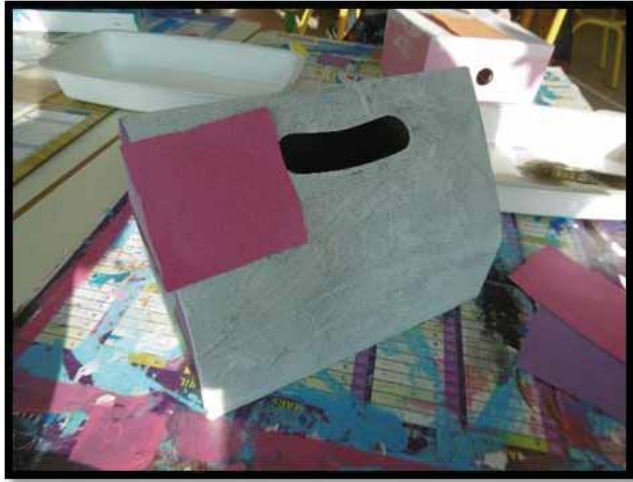
Rolling the dice (showing different forms). Naming the obtained form.

Rolling the dice of colours

Selecting the corresponding form and cutting it out

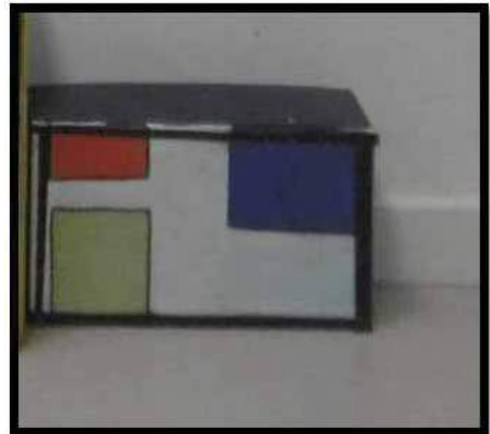


Glueing these forms to the painted box.



➤ **Step 3**

Encircling the box black or brown paper bands.
Encircling also the windows and doors (forms from the previous step) with pencils.
Glueing it all together with glue varn



SESSION 4

Organisation :

- Whole class

Material :

- Boxes

- Reproductions from session 2

⇒ **Observation and questions & answers:**

«Which of the pictures are most like your boxes?»

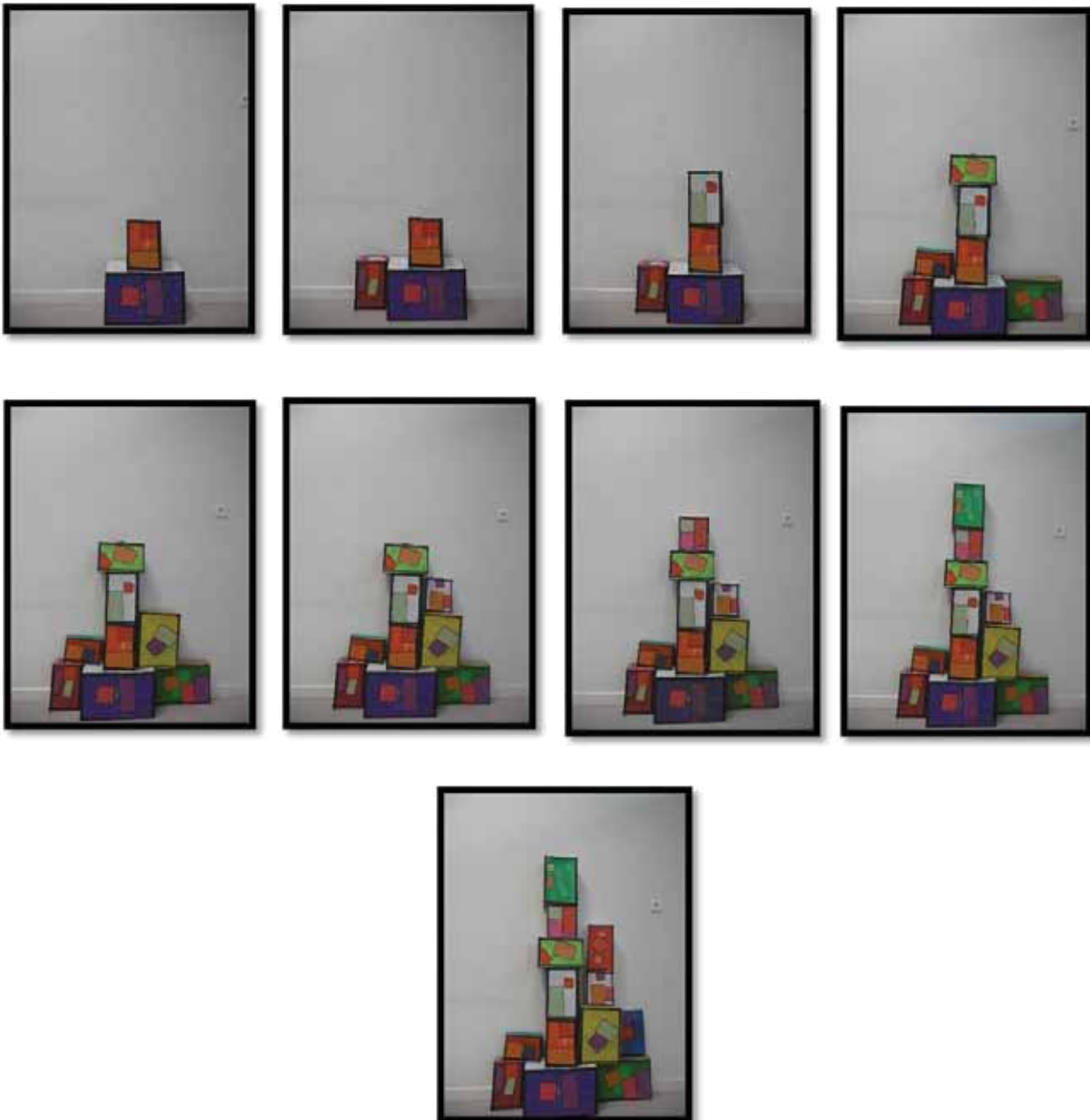
«Why?»

«What must one do to obtain a total likeness?»



⇒ notion of piling up the boxes

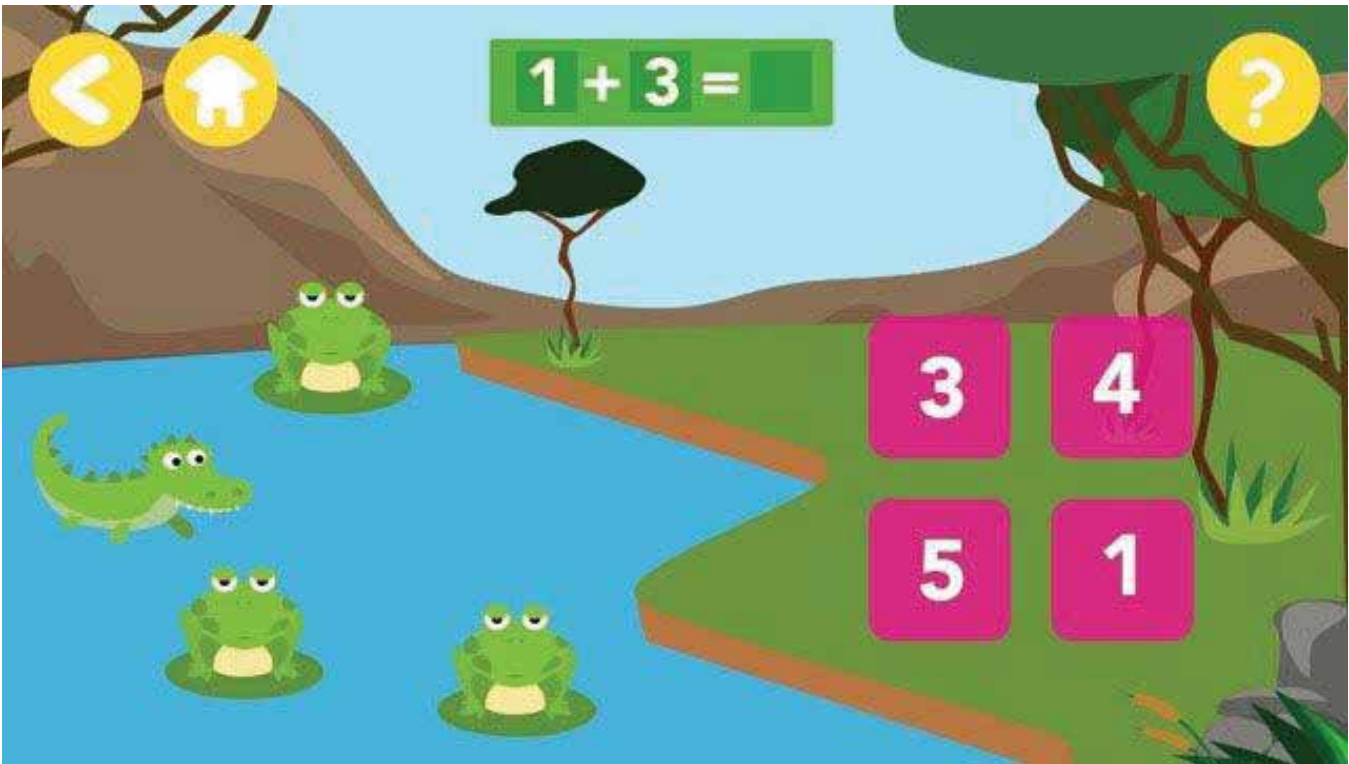
⇒ piling up the boxes in order to create modulable architectural buildings





OVER AND OVER AGAIN

January 2017



Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj

Grade: I (3-4 years)

Activity category: Science Domain, mathematical activity

Way of achieving: Logic-mathematical game

Activity theme: Playing with geometrical pieces

Activity type: Knowledge consolidation

Activity purpose: Consolidation of the capacity of knowing, naming, building and utilizing geometrical shapes (circle, square, triangle)

Objectives:

- to recognize geometrical shapes (circle, square, triangle)
- to distinguish and to name the colors (red, yellow, blue)
- to recognize and name size (big, small)
- to associate a geometrical shape with other objects
- to make images using learnt geometrical shapes

Tasks:

- Recognizing geometrical shapes and their description (shape, color, size)
- Sorting circles, squares and triangles by a chosen criterion (shape)
- Associating geometrical pieces with other objects

Rules of the game:

The child named by the teacher chooses a piece and he places it at the right house. In the 2nd part of the game, the children group the images of the objects on the magnetic blackboard by the first one they have. They build the images from geometrical pieces.

Game elements: Material manipulation, movement, applause, rewards

Strategy:

Methods: explanation, conversation, exercise, questioning

Ways of learning: pieces of the kit, magnetical blackboard, houses for the pieces with the images of the objects, tent, rewards- smiley faces

Organisation: upfront

Time: 15 min.

Game Process

The children are placed on the carpet in a semicircle. The material is in front of them. The teacher announces the theme of the game: “We will play with geometrical shapes”, explaining to them the rules of the game. The children are requested to participate in the game through the lyrics:

“Come to me,

name who knows,

By choosing one piece,

Its form, color and size precisely.”



The chosen child chooses the piece, describes it, and places it at the right house. The chosen child chooses the piece, describes it, and places it at the right house.

Eg: "I chose a big red square. I'll place it at the house of the squares"



Every child is applauded for a correct answer.



The circle, square and triangle are placed on the magnetic blackboard. The teacher requests the kids to choose an image from the table, and place it at the correct shape. Eg: I chose a ball, I'll place it at the circle.



In the last part of the game, the children form, on the magnetic blackboard, images from the shapes they have.



In the end, the children are rewarded with smiley faces.

Level: II(5-6 years)

Annual theme: "WHAT DO I WANT TO BECOME?"

Weekly theme: "I want to be..."

Activity type: Learning through practical exercise

Categories of learning activities: Freely chosen activities – tabletop game+ science(experiment) + role-playing game

Theme 1: „ At the store”

Means of achieving :role-playing game

Activity purpose: Forming the capacity of measuring the value of object with the aid of money

TEACHER OBJECTIVES

- Developing the correct use of measurement units and adequate vocabulary
- Developing the understanding and use of numbers and digits

REFERENCE OBJECTIVES

- To understand the value of an object through money
- To add/subtract 1-2 units between 1-10

OPERATIONAL OBJECTIVES

- to name the displayed products in the store and identify their prices by reading the labels
- to recognize 1, 5, 10 and even 50 (currency) bills
- comparing the value of the bills in relation with numbers ($5 > 1$, so 5 (currency) is more than 1 (currency))
- utilising money correctly, paying as much as an object costs and offering the correct change

Theme 2: „Measuring kids”

Means of achieving: tabletop game + experiment(Consolidation of knowledge related to measuring mass and volume of objects)

DIDACTIC OBJECTIVES:

- consolidation of mathematical knowledge related to measuring mass and volume of objects;
- consolidation of some specific practical skills.

REFERENCE OBJECTIVES:

- to measure mass and volume using non-standard units of measurement;
- to be able to measure using the acquired skills.

OPERATIONAL OBJECTIVES:

- to measure mass and volume using non-standard units of measurement;
- to register the data of the measurements in a table, ;
- to find which objects are light or hard using the balance;

Strategy

Way of approaching the learning: practical

Methods: game, explanation, demonstration, observation, work in groups, exercise, individual work

Materials: plastic cubes for building, balance, small/big tubes, outfits, money, water

Duration: 25-30 min

Place: classroom

Didactic scenario

After counting “1,2,3..” the children are divided into 3 groups, through lots, and then the centers are chosen – tabletop game(non-standard measuring of weight), science(non-standard measuring of volume) + role-playing game(money as units of measurement for value).



The first groups has the task of the „store” game. After the explanation and demonstration of the game, the children will be, one by one, „buyers” and „sellers”.

The buyers come to the store, greet the seller, tell him what they want to buy and its price, the sellers give them the product. The buyer pays, gets the change, greet the seller and leave.



The 2nd group has to weight colored cubes – they must put a sufficient number of cubes in each *TALER* , so as to equilibrate the balance. If the balance isn't equilibrated, the quantities not being equal, the children must find solutions to equilibrate it(place more or less cubes on one side or the other).



The 3rd group will get small and big tubes. The children must fill big tubes by using small tubes. They must count the number of small tubes used to fill a bigger one. The used liquid is water, and its characteristics are showcased (liquid, colorless, odorless). The children register the data of the measurement in a table, via dots.



The teacher uses a drop of ink to modify the water(from colorless to colored), without modifying its volume significantly.



The children observe the change in color(diffusion), the irreversibility of the phenomenon, and the fact that the volume hasn't changed significantly.

The groups change the centers where they worked, and in the end exchange impressions about the games they participated in.

Level II (5-6 years)

Activity type: knowledge check

Purpose: Developing the capacity of understanding and using digits between 1 and 7 in real context

Format: upfront/groups/individual

Ways of achieving: game

Objectives:

- To form arrays/groups of objects between 1 and 7;
- To relate the number to the quantity and the other way around;
- To form an ascending/descending numerical string between 1 and 7;
- To count ascending/descending between 1 and 7;
- To compare two groups of objects by their amount, grasping the quantitative differences by corresponding the elements;
- To use appropriate terms for the activity: “more”, “less” , “as many”;
- To name/recognize/establish the neighbors of a number, choosing every number's place in the number string correctly;

- To specify the neighbors of a number, choosing which is lower and which is higher;
- To place numbered images in ascending order;
- To associate the number of dwarves with the number of cups / the number of princesses with the number of princes;
- To perform operations of addition and subtraction between 1 and 7, with 1-2 units;
- To solve simple addition/subtraction problems by illustrations with 1-2 units, between 1 and 7;
- To use an adequate mathematical language;
- To respect the rules of the game;

Resources:

Procedural: demonstration, game, conversation, explanation, exercise, appreciation, questioning, observation

Material:

- drawing of a castle;
- fairy costume;
- tokens with images and digits;
- dwarf badges
- envelopes
- background

Task:

- Forming an ascending and a descending string between 1-7, relating the number with the quantity and the other way around, creating arrays with 1-7 elements, comparing 2 groups of objects, grasp the quantitative differences by corresponding them, recognizing the neighbors of a number (the lower/ higher neighbor), performing additions and subtractions, solving problems

Rules:

- Children chosen by the magical wand will pass the tasks, helping the fairy get to her kingdom

Game elements

- Surprise, applause, wielding the magical wand, rewards

Activity course

The children are divided in two groups.



Catching their attention is realized via the presence of the surprise element – the fairy. She requests the children’s help because she got lost and wants to get back to her kingdom. In order to get to her kingdom, she has to pass some tasks. She doesn’t know how, so she asks the kids to do the tasks for her.

The teacher presents the children the route the fairy has to traverse, but from place to place, she meets obstacles. In order to advance, the children will help her, solving the task they got.



The tasks are hidden behind the flowers placed on the side of the road. The fairy walks on the road and discovers each task.

After a task is solved by the kids, the fairy will move forward on the road, and after every task has been finished, the fairy arrives at her kingdom.

The teacher opens the envelopes, and specifies the tasks that must be solved.

Task I

- Place as many flowers as there are Red Riding Hoods in the story on the panel1.
- Place as many yellow princesses as the amount of money in the story bag. What digit do you place? 2



- Place the same amount of dragons. What is the magical number from all the stories. 3



Task III

Find the lower neighbor of number 6. Place its neighbors.



Find the higher neighbor of number 3. Place its neighbors.



Task IV

Order the images from the “Snow-White” story ascending, by their number.

Which image disappeared?





Task V

Place as many red flowers in the first vase as the digit indicates.(3)



Place as many yellow flowers in the second vase as the digit indicates.(4)



Where are more flowers? But less?



The relation $3 < 4$ is written on the panel.

Task VI

The children compare two groups of objects, grasping the quantitative differences by putting the elements in correspondence.

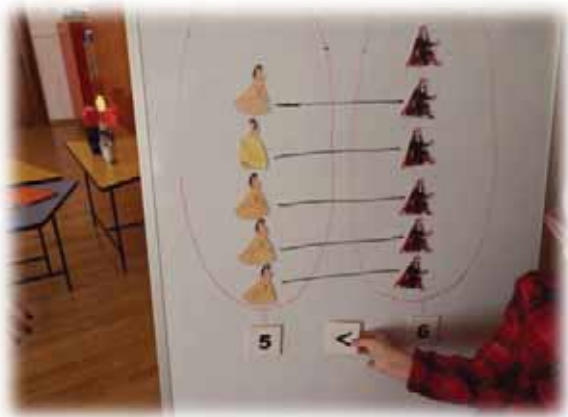


The relations are written on the panel:

$$7 = 7$$



$5 < 6$



Task VII

Red Riding Hood gathered 3 flowers. She wants to bring her grandmother 5 flowers.



How many flowers does she have to gather?

$$3 + \square = 5$$



7 Princesses were dancing at the party. Two of them left earlier. How many princesses are at the party?



The operations are solved on the panel, in front of the class.



In the end, the fairy gets to her kingdom and, as a sign of gratitude, she gives the children badges with their favorite dwarf (from the “Snow-White” story)



Turkey – Sehat Anil Eruluc Kindergarten, Salihli, Manisa

We have activities in our school for between thirty six and seventy two monthly kids



We worked pattern aimed to numbers and figures with between thirty-six and fifty-four monthly kids.



- Our aim is to provide cognitive and language development of kids
- Concepts they learn :Pattern, geometrical shapes, numbers.



One, two, three and circle, square, triangle



One,three, five and circle, triangle, pentagon



Two, four, six and square, rectangle, hexagon

Studies of group of between forty-eight and sixty monthly



In our country, all students have tablets for interactive education except for the pre-school class.

Kids in our school will have tablet in two thousand eighteen (2018)



NUMBER CIRCLE (between sixty and seventy-two monthly group 60-72)

Object with number









Between Forty-eight and sixty monthly group PATTERN WORK





Italy – Nuova Direzione Didactica – Vasto – Abruzzo

RECIPIENTS: 3/4/5 Years Old

EUROPEAN KEYSKILLS:

- Based Competence in mathematics
- Digital Competence

FIELD OF EXPERIENCE:

- Knowledge of the world

DEVELOPMENT SKILLS GOALS:

- He knows machines and technological tools (PC, LIM and remote such as keyboard, printer, mouse, USB key); he explores the potential of discovering the functions and their possible uses

KNOWLEDGE:

- Digital and technological tools (pc, LIM, didactic's software)
- Numbers, numbering and counting

ABILITIES:

- Utilization of didactic's softwares.
- Group, sort, count and experience the first forms of counting (operations)

AIMS:

3 years old

- Discover and experience the main pc / LIM functions
- Make simple classifications and recognize quantities up to the number 5

4 years old

- Discover and experience the main pc / LIM functions
- Grouping, compare and sort objects, experimenting with early forms of numbering and number recognition (up to number 10)

5 years old

- Know the main functions of the PC / LIM
Name the main parts of the pc / LIM
- Perform paths by experiencing early forms of programming (Coding)
- Know and work with the quantity, compare and order objects; associate the quantities to the number sign (up to number 10 and over).

“By the Sumerians to the computer!”

Narrative, historical, musical schooling by discovering numbers and the technology.

We know the Sumerians and all their inventions (writing, engineering, trade, construction, school, numbers ...), with a Power Point presentation. The children approach to the use of the interactive whiteboard and the PC, to know the main properties and how they function, using a "computer language" (power, click, pen drives, folders)



Then we saw the story of Uri (source: The Garden of Archimedes) that tells how the little one has devised a system to count. We made a billboard, pictograms and the game of stealing flag with Sumerian "numbers"



The fingers of clay





Dramatization of the story

Uri and his mum



Counter of the market with pictograms



“Uri goes to the market”

Course of CODING UNPLAGGED

The child must recognize the number displayed by the mother, take the amount of fingers of clay , guided by his companions in the path, it has to come from the merchant and take the items requested by the mother. After making multiple paths must calculate with Mom how much she bought everything, so add up and, as sometimes eat some food or loses, has to count how many items you take home, then subtract.



“CHIOCCIOLINA AND HER FRIEND COMPUTER”

We know best TIC through the story of "CHIOCCIOLINA AND HER FRIEND COMPUTER", activities proposed for children for all three ages.

<http://www.melamusic.it/imparare/educazione/informatica/chiocciolina-e-l-amico-computer.html>

Through a fun story and songs, children can learn about the main elements of the computer and their functions. Through the computer language we knew some English little words that we have translated into Italian.





We built our laptop ...



... And the Chiocciolina book with drawings, lyrics and verification cards.



**“FLY FLY BEE MAIA”
QUANTIFICATION**

The LIM allows you to enhance and strengthen the logical-mathematical abilities of children through activities that engage them to count and compare different amounts in attractive way.



The first part of the activities involved children aged 3 and 4 years.

Sitting in front of LIM, we show the video of the theme song of the cartoon "Maya the Bee", drawing it on the website www.youtube.com



After the listening for few times of the song, we ask to the children some questions and we have transcribed the answers:

Questions

You know Maya the Bee?
Have you ever seen this insect?
What feeds? ...

Answers

"This is a cartoon that I know " "I always look with mum and Dad" ""is a yellow and black insect"
"he stung me" "he eat honey" "No he makes honey!" "he fly on flowers"

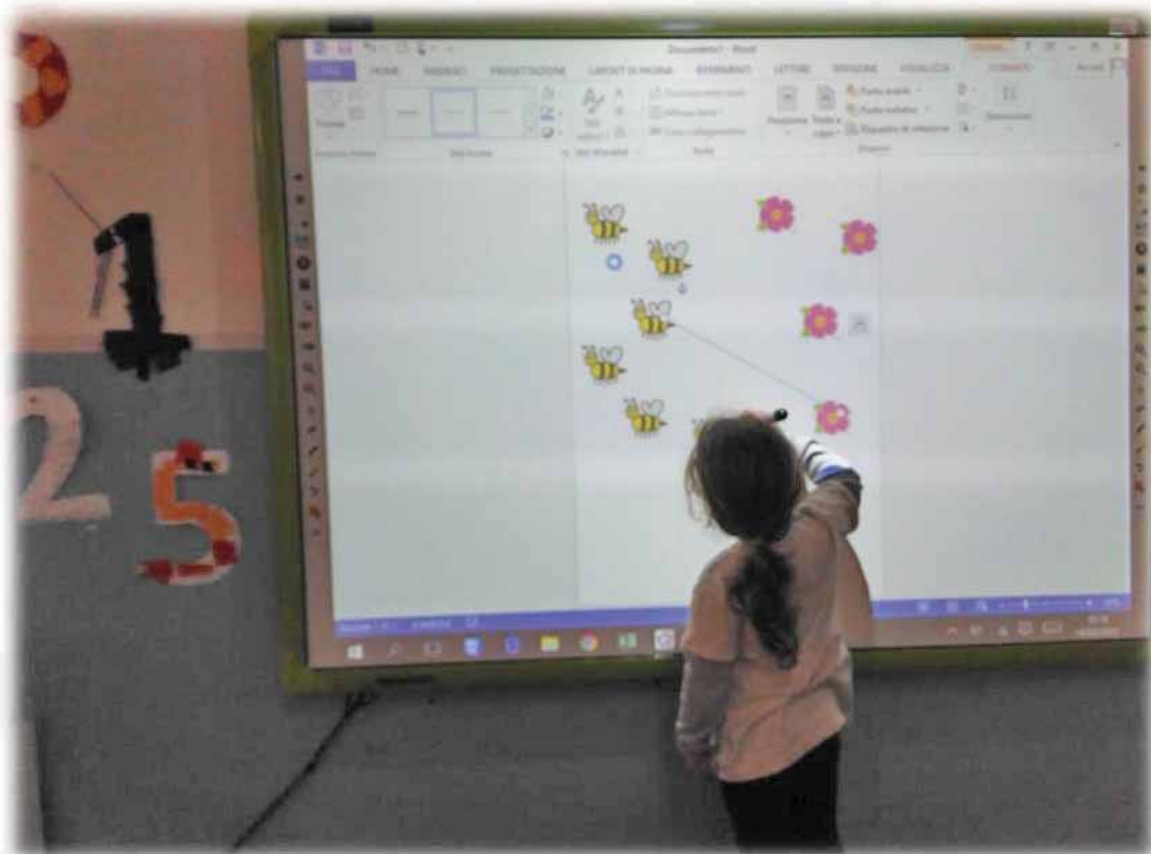


Then the children become Bee Maia and they land upon a flower.



With children of four years, we start the LIM software and drawing from previously saved images, we insert six bees and four flowers.

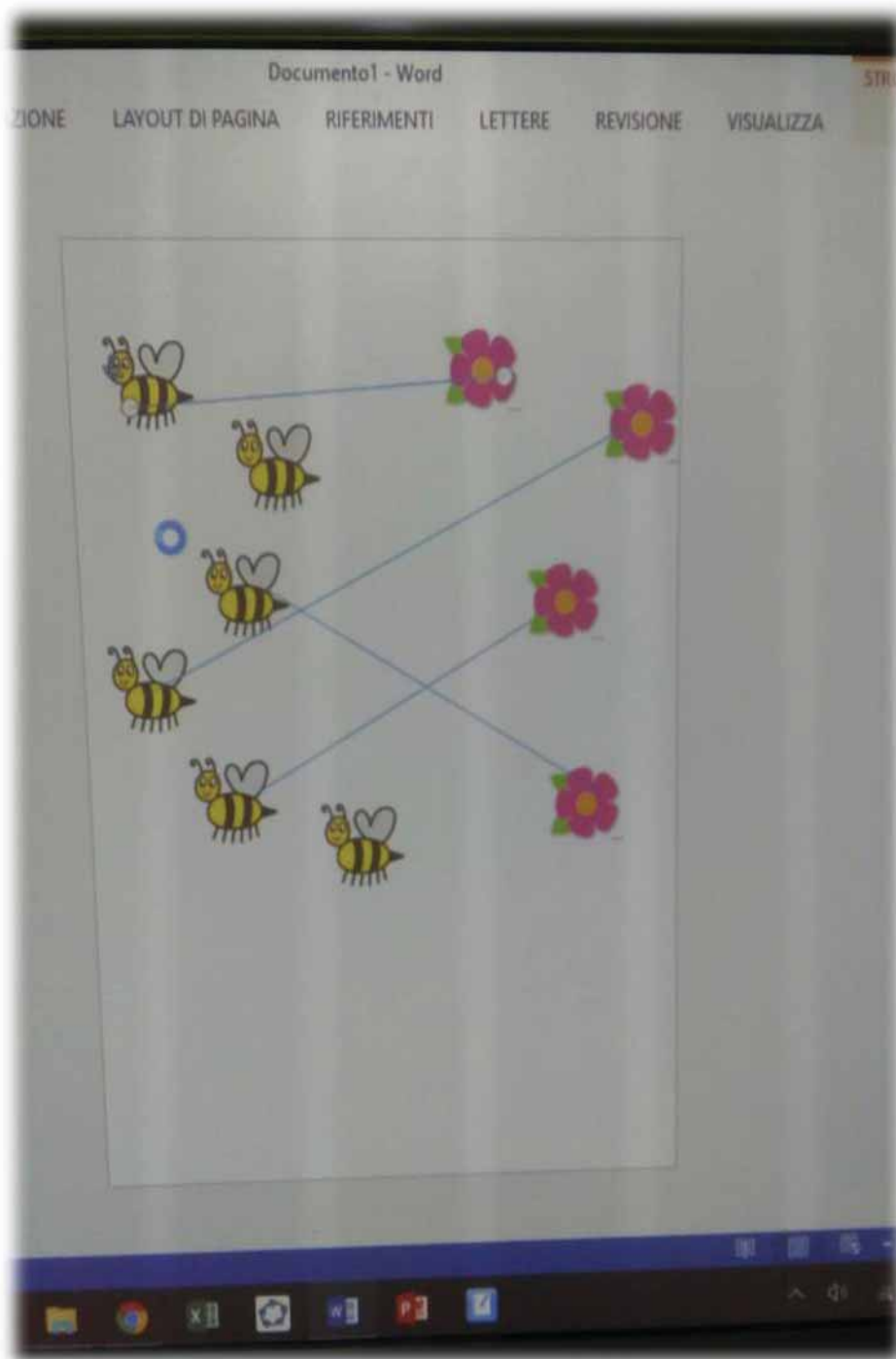
We ask four children, one at a time, to connect each bee to a flower using the **Pen tool**.





Looking at the final result, we note that a bee has been left without its flower: we ask the children, according to them why.

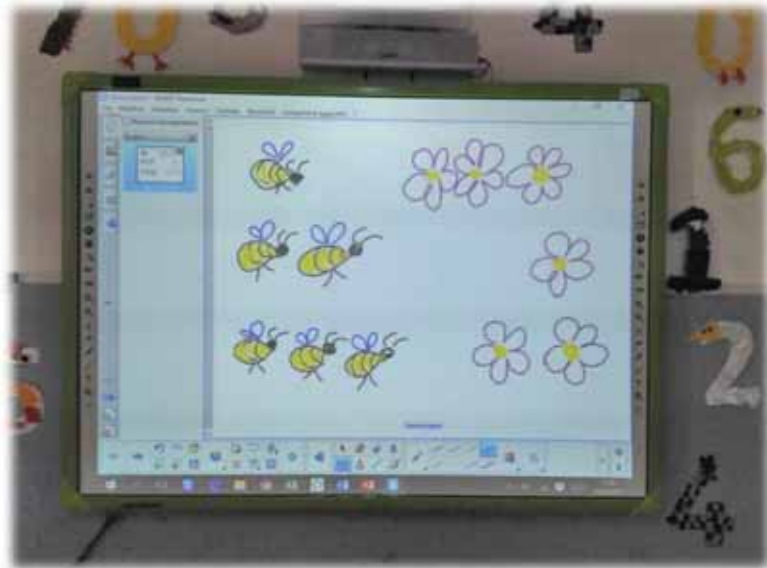
We listen to their hypotheses and together, we count the number of bees and the flowers. We compare the quantity, finding that two flowers are missing.



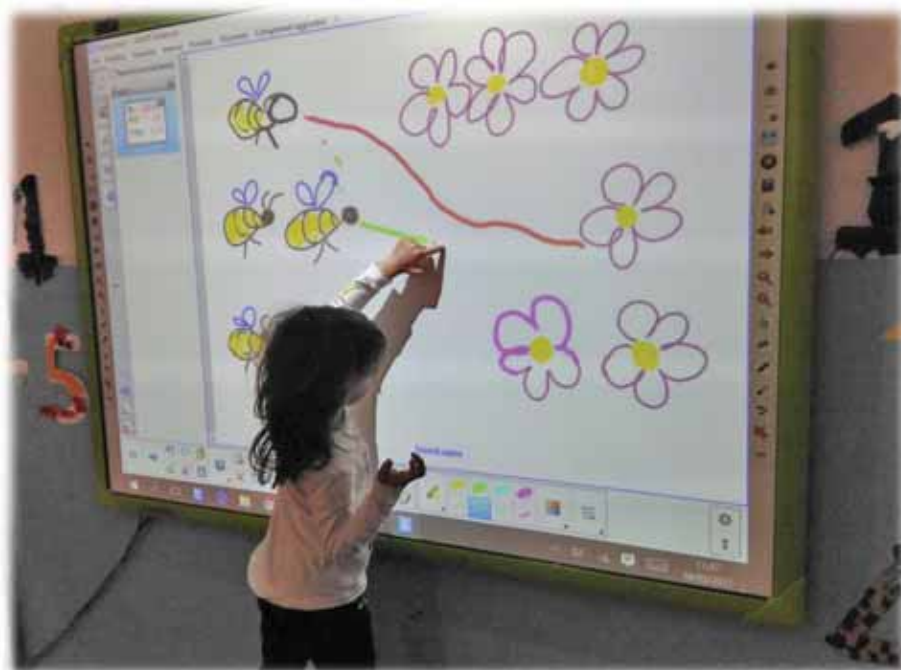
LET'S COUNT

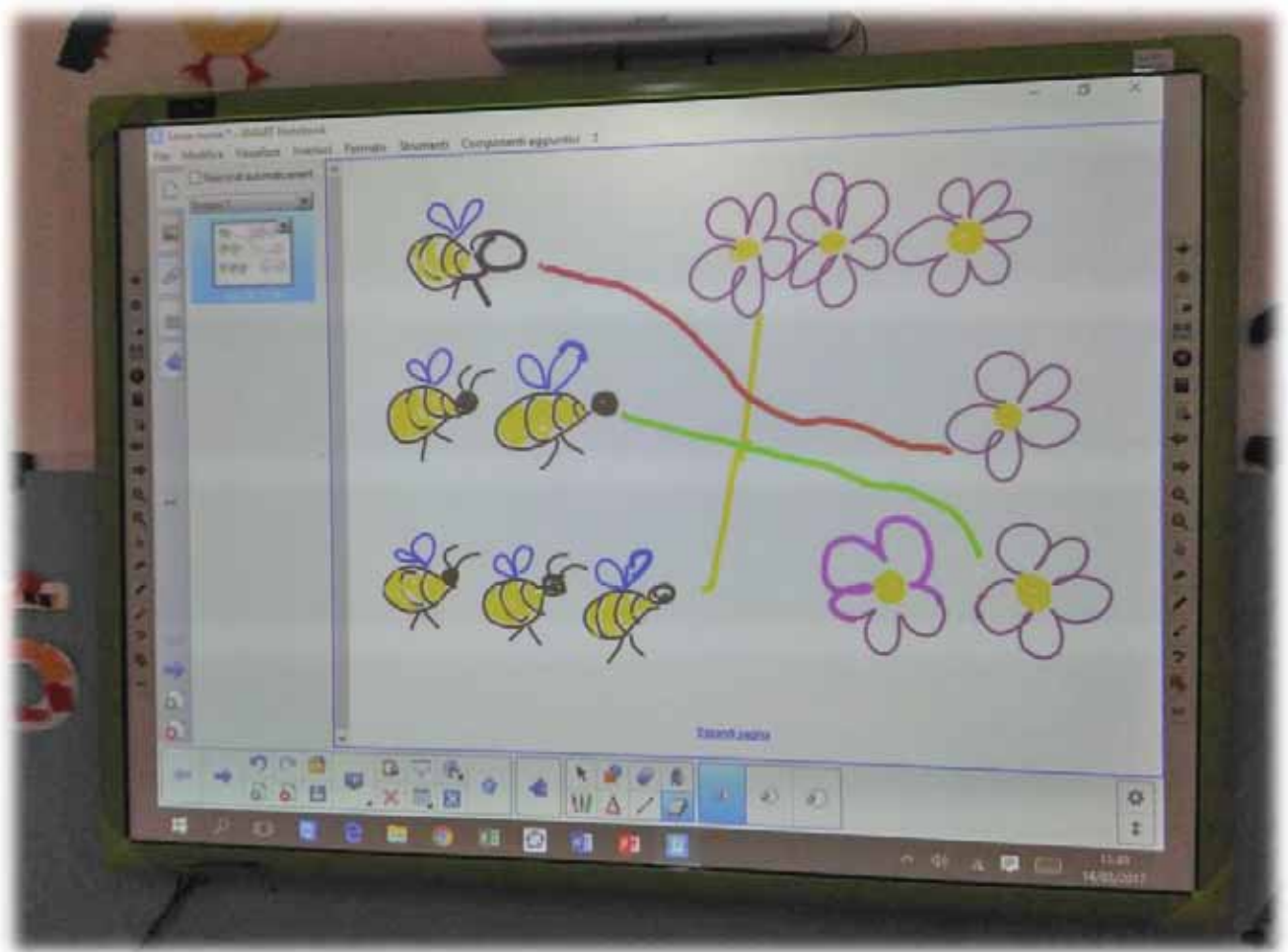
For a play with children with numerical quantities, in a new page, we draw a bee to the left under two neighboring bees ... and so on, respecting the numerical progression.

In the right part of the paper, we draw the corresponding quantities of flowers, but arranging them in random order.



We invite one child at a time to connect the bees to the flowers of the same amount, using the **Pen tool**, changing each time the stroke color.





As a child connects with each other the elements, we invite him to count them. We continue the work until we reach the numerical amount corresponding to 10.

“LET’S GO TO COUNT BUBBLE IN THE SEA”

The teacher based on of a game found on the site www.abcyca.com , invents a story titled "The Black Bandage Pirate ", which introduces the subject for children of 5 years.

The Black Bandage Pirate

Once upon a time, a man called Black Bandage Pirate.

Black Bandage Pirate always lived on a ship with his other pirates friends who, like him, loved to look for treasure around the sea; he could see with one eye, because one day, when he was still young, he fought against a big fish, swordfish, that wanted to steal a blind eye, to punish him for his greed.

And it was from that day that the only treasure he sought, was his eye, guarded by all the fish of the sea in a chest, in sheol.

It happened that one day a goldfish remained entangled in the blue network of pirates who were already prepared to put it in a pan for dinner ...

“Please gentlemen, let me go back into the sea, I am small, and I want to get back to my mom...”
said the little fish scared.

Only Black Bandage Pirate softened his words and convinced his friends that would not be a big dinner because it was a miserable, small, useless red fish and, besides, so small that it would not be enough even for a bite!

And so it was that the little fish out of gratitude promised Black Bandage Pirate that he would help him to find his treasure.

And you know how? The little goldfish, led the way with 10, 100, 1000 bubbles, that the pirate was bursting to breathe, until you reach deep down to the sea the chest, and finally, finding his only treasure: his eye !!

At the end of the story the children dramatize the story and later represented the activity graphically.



To consolidate the concept of numbering and counting, always in reference to the characters of the story, the children then played "Throw the bubble." In practice, the containers are placed, representing the chests, in which the balls are thrown. The children, divided into two teams, take

turns rolling the balls into their respective holes. Each child, at the end of each round count the balls that managed to put on and record the number. The team that sum more balls win.



At this point the teacher offers interactive play on the LIM. An educational game for kids to practice the numerical sequence; children must find the lost numbers by popping the bubbles and drag the numerical symbol reference in the correct space. A game of levels that leads the child count up to 100. http://www.abcya.com/number_bubble_counting.htm



PLAYING WITH NUMBERS

By clicking on each colored number, drag and drop on the corresponding on the Black one.

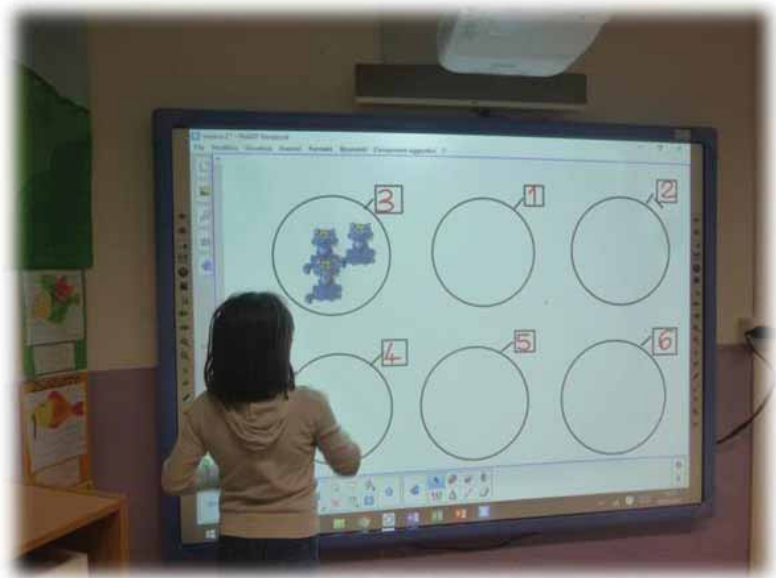
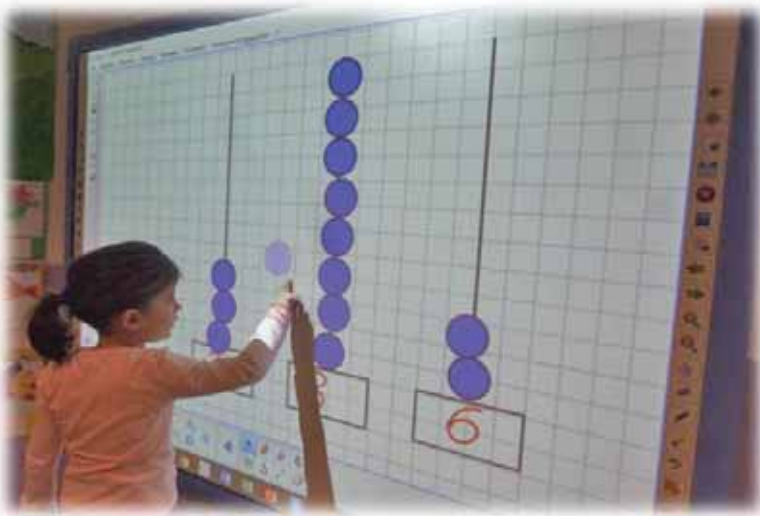


(Eryka 6 years old, autism spectrum disorder)

VERIFICATION

LET'S PLAY WITH ABACUS AND SETS

In the first exercise, it is proposed to the children to transfer, dragging, the balls on the abacus on the number shown in the box. In the second exercise, We draw circles on the LIM, each of which is accompanied by a small box where the teacher will write a number. The child in a free way or following the teacher's indication will draw or drag as many elements as indicated by the number in the card.



The conquest of autonomy is a fundamental objective for the growth and for the social inclusion of the person. Knowledge of mathematical concepts is a prerequisite for the development of autonomy.



*Estonia – Sillaotsa School – Haaslava Parish, Päkste village – Tartu
County*

January: OVER AND OVER AGAIN

This is the fourth standart gain in the “Good Start, Grow Smart” that helps prepare children for the study of number sense, measurment, geometry, algebra and data management in later grades.



Learning areas: Mathematics

Age of Children: 6-7

Topic: *OVER AND OVER AGAIN*

Learning Objectives:

- Child guesses how many steps Bee- bot robots must do to his or her nameplate
- Child solves maths task, programs a robot and finds the right answer
- Child knows left and right sides well
- Child can cooperate

Needed learning tools/materials: Bee-Bot is an exciting new robot designed for use by young children. Directional keys are used to enter up to 40 commands which send Bee-Bot forward, back, left, and right. Pressing the green GO button starts Bee-Bot on its way. Bee-Bot blinks and beeps at the conclusion of each command to allow children to follow Bee-Bot through the program they have entered and then confirms its completion with lights and sound. Children want to use Bee-Bot over and over and are inspired to enter ever more creative and complex command sequences.

Learning activities:

There were 2 groups. (9+9children).Teacher introduces and demonstrates how Bee-bot robots work : how to switch on and off, how to give commands, how to follow signals etc.



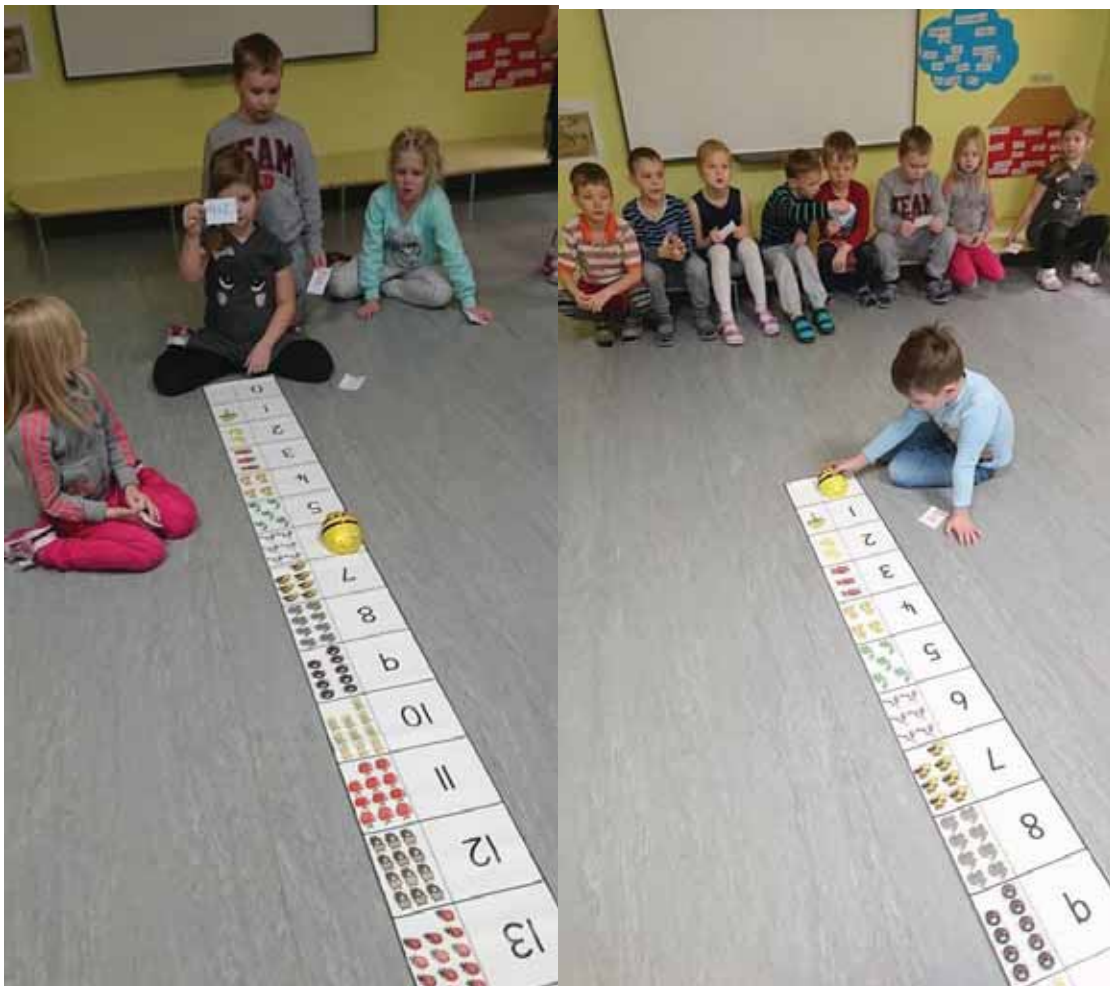
Activity nr 1.

Teacher puts nameplates on the floor. Every child guesses how many steps a robot do to reach the nameplate. Then the give commands to the robot. After that they check if it was right or wrong.

Activity nr.2

The teacher will let each child draw by lot of mathematical operation tag. The child solves the calculation, and a programs the robot with a suitable number of steps which the robot reaches the right answer.

An activity is considered successful when the Bee Bot robots perform the command synchronously.



Bulgaria – CDG 29 “Lubimka” – Dobrich

“NUMBER EIGHT”

/5-6 years/

Headline targets:

1. Formation of ideas about number eight.
2. Formation of skills to refer to the amounts of object's numbers to eight.

Expected results:

1. Compares groups of objects with the relations "more," "less," "so-much."
2. Knowledge of quantitative and yet another significance of the number eight, recognizes its digits; count to eight.

Methods:

- Talk;
- Exercise;
- A game show.

Means:

- Operational and demonstration material



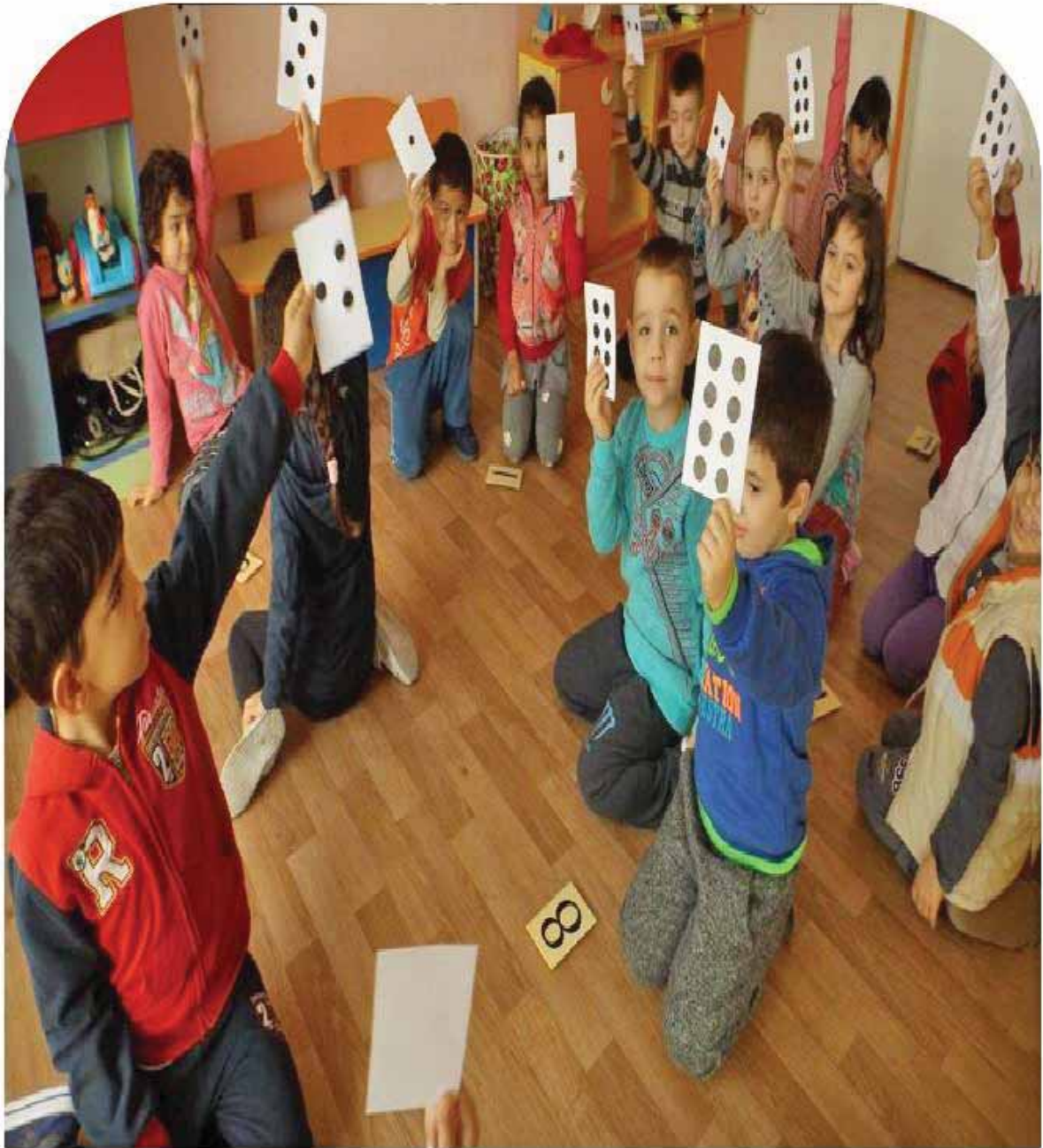


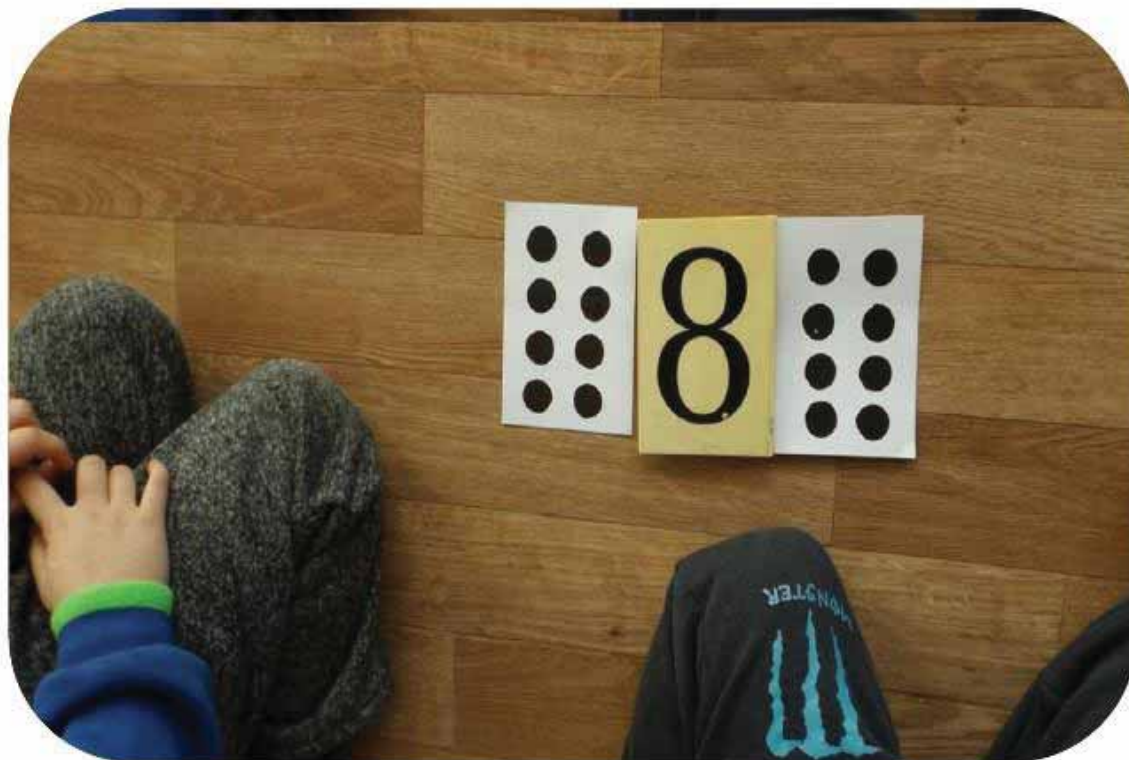
This page contains several educational activities:

- Number Recognition:** A vertical column of numbers from 0 to 8, each inside a circle. To the left of each number is a circle containing a corresponding number of dots. To the right is a square box containing the same number of dots.
- Fish and Shellfish Illustrations:** A collection of hand-drawn fish and shellfish (like scallops) scattered across the top and middle sections.
- Counting Grid:** A 2x10 grid with two fish icons in the first two cells of the top row.
- Triangle Counting:** A vertical rectangle containing five small triangles.
- Circle Counting:** A vertical rectangle containing three small circles.
- Numbered Ladder:** A vertical ladder-like structure with ten rungs. The numbers 8, 5, and 3 are written on the rungs from top to bottom.



"Funny numbers"







In any large round stained so figures, as the figure shows the right. In the small circle on the left write the number of pieces that are left unpainted.



“Decorations kites“

1. Consolidate knowledge of geometric shapes and grouping certain sign.
2. Algorithmic sequences of familiar geometric figures continue.





"Pizza"

Consolidate the children's awareness of the digits of numbers, counting and quantitative reference to the graphic sign of quantity.





"Rings"

Consolidate the skills of children by comparing relations "more," "less," "so-much" and relate the quantity, color and figure.





"Funny Balls"

Stimulating activity and enriching emotional perceptions of children through the game as a method and a mean of learning and entertainment.





"Merry clips"

1. Perceived collection as a practical addition and subtraction by withdrawing a portion of the group.
2. Correlates with the amount of scar character / figure /.
3. Written decision tasks with numbers.



"Early risers neighbors"

1. Consolidate knowledge of quantity and serial counting.
2. Development of visual-motor coordination.
3. Guidance in two numeral coordinate / row and column /.

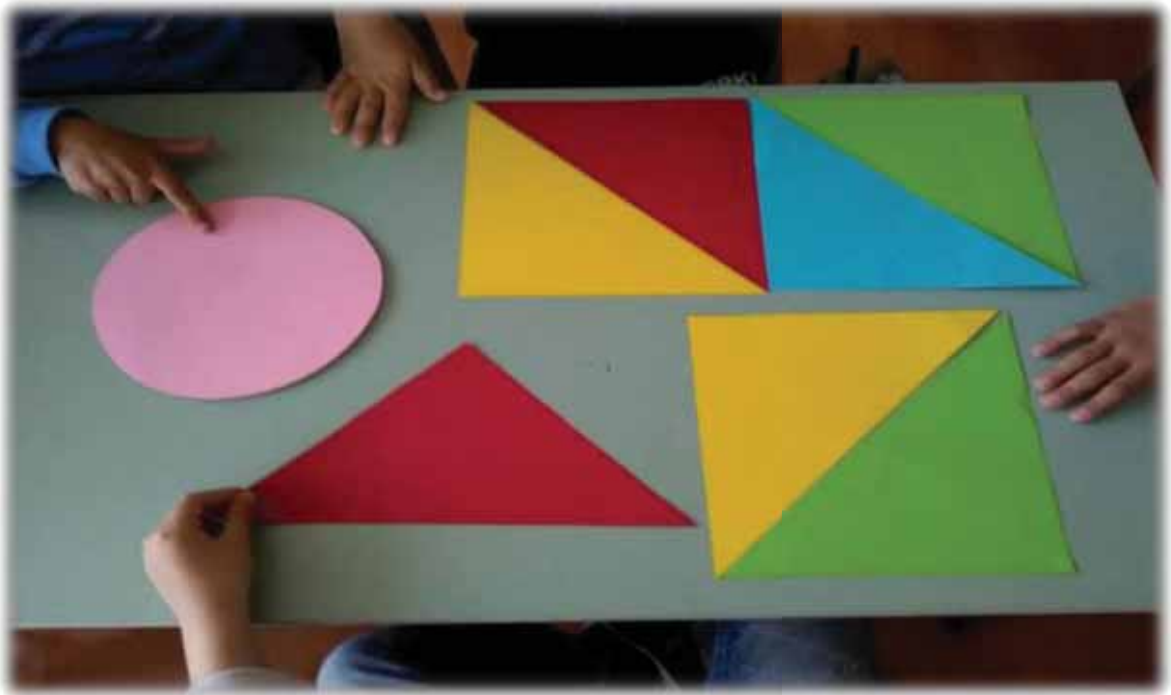




"Tasks in pictures"

1. Summarizing the knowledge of geometric figures.
2. Improving the ability to read codes and compose a geometric figure.
3. Conversion of geometric shapes based on visual thinking and analysis.





Qualifications-teachers

The basic idea of the method of Maria Montessori the children stimulate themselves.

The motto of pedagogy Montessori is: "Help me to do it alone!"

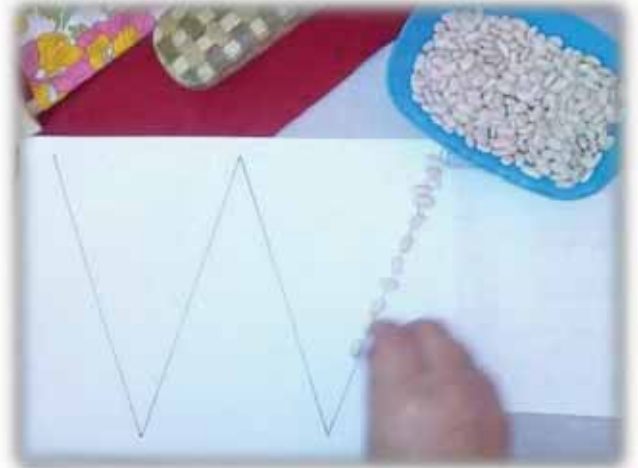






Teachers in our kindergarten prefers pedagogy of Montessori.

Children should be brought up in a loving environment, can build and develop their personality.



France – École Les Moulins – Barbentane – Provence, Alpes – Côte d'Azur

MORNING RITUALS:

naming the date and the absent classmates

4,5,6 years olds

Objectives:

discovering the numbers and their usage

- communicating the information on a given number orally and in writing (count)
- reciting the subsequent numbers until 31
- reading and writing down the numbers until 31

examining forms

- naming certain two-dimensional forms

the written word

- showing curiosity about the written word
- recognising the letters of the alphabet and knowing the three different ways of writing them
- recognising the days of the week and writing them down
- recognising the first names of the classmates

identifying a moment in time

- understanding a short time span (day) and a long time span (succession of days in a week, a month, seasons); working with the past and the future
- using social points of reference on a daily basis in order to determine the days of the week, to place the events of school life within time
- acquiring time stamps in language (yesterday, today, tomorrow...) and using the corresponding tense (past, present, future)

THE DATE

➤ 4 to 5-year olds:



Tearing off the daily slip (or two for the weekend) from the tear-off calendar



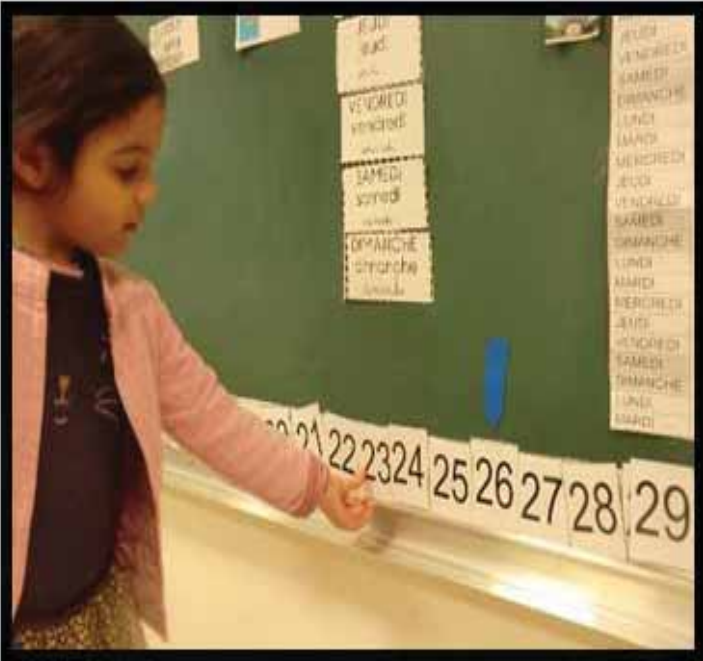
Finding the label of the day and name it with the help of the first letters of the word or by using a song with all the days of the week



Sticking a coloured dot* on the calendar with the help of the number showing on the tear-off calendar

* a different coloured dot is used each month, the pupils must name the form and colour chosen

Calling the number or counting it on the calendar until found, place the number label



At the end of the year the pupils are able to write the date in capital print



➤ 5 to 6-year olds:

Helping the youngest pupil to count on the calendar if necessary; putting the recognised day into words .



Writing down the date in capital printing characters between two lines while being dictated by the classmates (one letter after the other)



Observing the teacher who writes down the date in cursive script

At the end of the year the pupils are able to write the date in cursive script.



Using social points of reference on a daily basis in order to determine the days of the week, to place the events of school life within time





**THE
ABSENT
/PRESENT
PUPILS**

➤ **4 to 5-year olds:**



Counting those absent, show it with the fingers, finding the label with the right number.

Recognising the first names of the absent classmates, classifying them according to gender (boy/girl)





5 to 6-year olds:

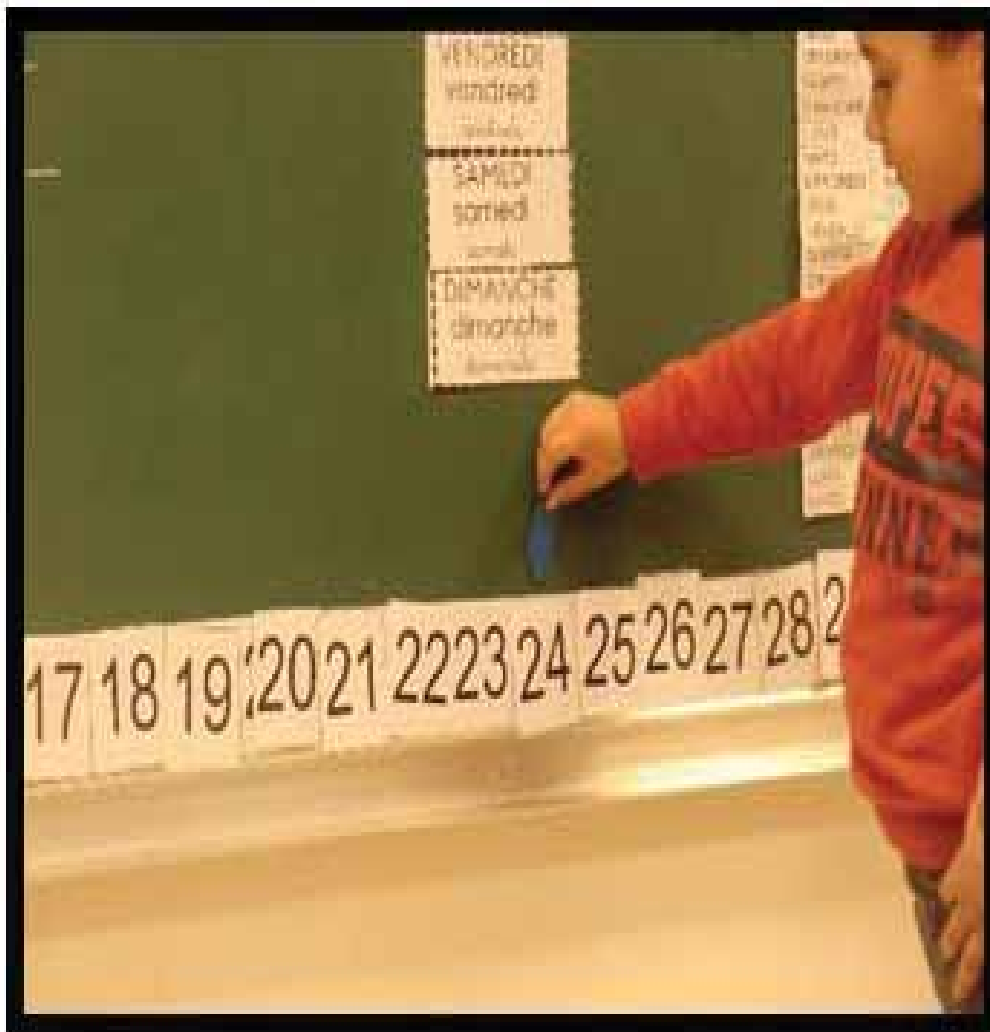


Counting the boys and girls present or calculating a subtraction of those absent for each category in relation to the total number; Writing it down

Finding the total number of present



pupils by counting or subtracting (arrow on the blackboard)



WHAT ARE THE CHANCES?

February 2017



Romania – Gradinita cu Program Prelungit Nr. 8 Targu-Jiu, Gorj

Age Level: I (4-5 years old)

Annual Theme: „Who and how to plan an activity”

Project Theme: „What travel ?”

Week Theme: „Earth transport vehicle”

Activity category: Science Domain, mathematical activity

Activity Theme: „Detectives”

Ways of achieving: mathematical game

Activity Type: checking and consolidating knowledge and skills

Organization Form: upfromt/groups/ individual



Purpose: developing the skill to relate the number to the quantity and the quantity to the number; checking the count between 1 to 5; identification the number's place in the number string correctly; education of the independence in action;

Objectives:

- To form groups of objects from 1 to 5 elements by the form criterion;
- To count ascending/descending from 1 to 5;
- To associate the digits with the number of the elements;
- To name/recognize/establish the neighbors of a number, choosing every number's place in the number string correctly;
- To compare the groups of objects and to name/recognize/establish the neighbors;
- To use an adequate mathematical language;
- To respect the rules of the game;

Tasks:

o Relating the number with the quantity and the other way around, creating arrays with 1-5 elements, recognizing the neighbors of a number;

Rules of the game:

The children are detectives and they must solve a lot of provocation during the game. They will be detected and have to decipher many mysteries. The tasks are in closed envelopes in the box mystery. A child will come and pick the first envelope, the first mystery. After it will be deciphered move to another envelope until it is over. The results will be recorded on the recording panel of each team. The best team of detectives will be with most responses date- deciphered mysteries.

Game elements: Surprise, applause, competition, rewards;

Strategy:

Procedural and methods: demonstration, game, conversation, explanation, exercise, appreciation, questioning, observation;

Material resources: box mysteries, cards with digits, worksheet, cars, silhouettes of vehicles, images of transport vehicles, team boards with the results;





Game process:

Children are seated in a semicircle and receive surprise as teaching, material with which will take place the „Detectives” game .



Children receive ,in chest ,pieces of different colors, geometrical figures numbering from 1 to 5 and form working groups - five teams: red team, blue team, green team,orange team and yellow team.



Once the materials are presented, guess rules and tasks.

„ Today will be detectives and will have to decipher many mysteries. The misteries is in closed envelopes in the box misteries. One child will come and pick the first envelope, the first mystery. After it will be deciphered move to another envelope until it is over. The results will be recorded on the recording panel of each team. The best team of detectives will be with most responses date- deciphered mysteries.”



Task 1: „ I sit in my box!

On a board in front of the class, they are placed garages, numbered 1-5 and on the table a lot of chips with transportation. Head game up a palette with a digit; one child from each team will choose from the multitude of vehicles, as many as the figure shows and will sit in the properly garage (with the corresponding number); It will numbering include the encirclement.







Another child's team will show smaller neighbor and largest of the garage respectively. Children who answered correctly will receive a smiley face on registration panel .



Variation: Task 2: ,, Search me and recognize me!

a) Recognize figure, looking garage and recognized means of transportations. Tell neighbors. They are drawn, on a panel, garage numbered from 1 to 5; in every garage is a car (figures).



This version runs at the teams: a child of a team, choose a number from 1 to 5 and ask a child from another team to say what is the car number and which are the neighbors .For examples: to garage number 3 is police car ; in neighboring garages are bus and ambulance; smaller neighbor is the number 2- bus ,largest neighbor is number 4-ambulance.





b) Children, as a team will come in front; sits in front of the group in ascending order of the numbers of breast and game leader asks: "What number place lives (Daria). Children respond; game leader asks what are "neighbors Daria" -more than, less than, and the child asked the teacher will respond.





Task 3 „ Solve faster and better. ”

Children will have to solve a worksheet. They will be seated at tables all



Worksheet will have the task to color the train respecting requirements: half will color geometrical shapes with colors required, and half will color figures after numbers with color requested. In the end we will find that all trains will be colored the same. The answers from this test will be recorded by children with the teacher on the panel recording the outcomes of each team. Those who have the same number of colored geometric shapes so are very good detectives and will receive a smiley face. Include smiley faces of each team will determine the best team of detectives.







Two educational charts for handwriting practice, titled "DIN DIBUȚILE" (From the Pictures) and "DIN SILEȚILE" (From the Silences). Each chart has columns for "DIN DIBUȚILE" and "DIN SILEȚILE", and rows for individual students. The charts contain handwritten numbers and symbols.

NOME	DIN DIBUȚILE		DIN SILEȚILE	
	TRASA 1	TRASA 2	TRASA 1	TRASA 2
1		3	3	2
2		3	3	2
3		3	3	2
4		3	3	2
5		3	3	2
6		3	3	2
7		3	3	2
8		3	3	2
9		3	3	2
10		3	3	2



Turkey – Sehit Anil Eruluc Kindergarten, Salihli, Manisa

What's it in the balloons?

Activity Category: Science (Small group Group and Individual Activity)

The Age : 48-60 Months

OPERATIONAL OBJECTIVES

Cognitive Development:

Learning outcome 1. Pays attention to object,situation or event.

Indicators: Focuses on the object / situation / event that needs attention).

Learning outcome 2. Guess about object ,situation or event

(Indicators: Tells the hint of the object, situation or event, explains the prediction by combining the hints, examines the real situation, compares the prediction to the situation.)

Learning outcome 3. Observe the object or assets.

(Indicators: tells its shape, size, texture, amount.)

Language Development:

Learning outcome 4. Use the language to get communication.

.(Indicators: Start chatting. Continue and join the chatting.)

LEARNING PROCESS

- Put the materials with different properties into the inflated balloons of yellow, blue, green, red as many as the number of kids.Items of the same property are placed in the same color balloons.
- Kids are divided into four groups based on colors (yellow, red, blue, green).
- Kids in the same group take the one from the same color balloons.
- The kids in the group try to guess what materials they have inside by touching the balloons.
- At the same time, kids are asked questions about the color of the balloon, whether the material inside is tough or soft, what it looks like and what it might be.

- Predictions of kids are taken.
- Kids are given the opportunity to draw about their predictions.
- The predictions of kids are overwritten on the drawings by the teacher.
- Drawings of kids are hang on a board or a suitable place in the classroom according to the groups.
- Each child removes the object in the balloon and places it underneath the drawing.
- Talk about drawings and objects.

MATERIALS

- Materials such as balloon, flour, chickpeas, sand, lentils, beans, beads; Cardboard or craft paper, pens

WORDS: -----

CONCEPTS

- **Color:** yellow, blue, green, red
- **Sense:** hard-soft

Please PAY ATTENTION at the following points

- Balloons must be prepared by the teacher in advance.
- After the balloons are filled, the mouths of the balloons are closed with an object, such as a packing rubber not to spill the objects.
- Give children enough time to guess what is in the balloons.
- Kids should be asked about open-ended questions that will provide them to guess the materials in the balloons.

The Other Recommended Activities

- Each group can be given balloons in different colors. There can be different objects in the balloons. The game can be played with various directions.
- Sound boxes are made and various objects are placed in boxes. Kids swing the boxes to guess what they are from their voices.
- Odor pouches are prepared and guessed in what is it in the same way.
- Collage work can be done by using materias in the ballons for drawing.

- The activity can be carried out youngerl groups of kids by changing the types of balloons and the materials placed inside them.

Evaluation

At the end of the activity, the following questions can be asked to the kids;

- What have been in the balloons? What have we done with these?
- Have you enjoyed the event? Have you liked to guess by touching?
- What were your predictions of what was in the balloons, their size, their tactile properties? What did you think bu what did you find?
- Is there any objects with different tactile properties? Can you find me two objects with very different tactile properties?

Parents Participation;

- Information about the activity is written next to the drawings exhibited on the board and information about the event is sent home with newsletters.

It is suggested that parents play guessing games at home.

Adaptation

If there is a kid who has Language and Speech Disorder in the class;

- If there is a kid who has a receiving-side problem, use simple and short sentences when asking questions.
- If there is a kid who has a problem with the expressive dildo, he / she will be given a period of time before he / she can answer the question asked. During this time, his/her friends are also provided listening him/her.
- If the words can not be pronounced completely, the voices that the kid removes will be properly pronounced after the kid and modeled for the next test to the kid (for example, if the material in the balloon is lentils and the kid can pronounce it as "meriink", "yes there is lentil in the balloon").

Italy – Nuova Direzione Didactica – Vasto – Abruzzo

RECIPIENTS: 4/5 years

TIMES: February 2017

EUROPEAN KEY COMPETENCES: Basic math skills. Learn how to learn.

FIELD OF EXPERIENCE: Knowledge of the world. The body and the movement.

DEVELOPMENT FOR COMPETENCES GOALS: The child is curious, explorative, Make questions, discusses, compares hypotheses, explanations, solutions and actions.

KNOWLEDGE: Certain / uncertain / possible / impossible / probable event

SKILLS: Know how to observe events by evaluating their chances

AIMS:

- Understand probability relationships
- Know the proper terms of probability: event, eventual event, possible, impossible, probable

ACTIVITIES:

The Calendar

we counted and recorded in the table number of children of divisive classes in male and female to consolidate:

- the knowledge of numbers
- the capacity to register in table
- the concept of much, little, no

the *head class* is raffled among children of 5 years; the "help" is raffled between 4 years old children

the extraction gives the inspiration to quest:

"today is a 3-year child the head class?",

"would i know that i will be one year of 5 years?" and that there is a second of the situations which are quoted only. Children answer and start to provide words: maybe, sure,.... impossible, certain.



Let's increase the difficulty of questions.

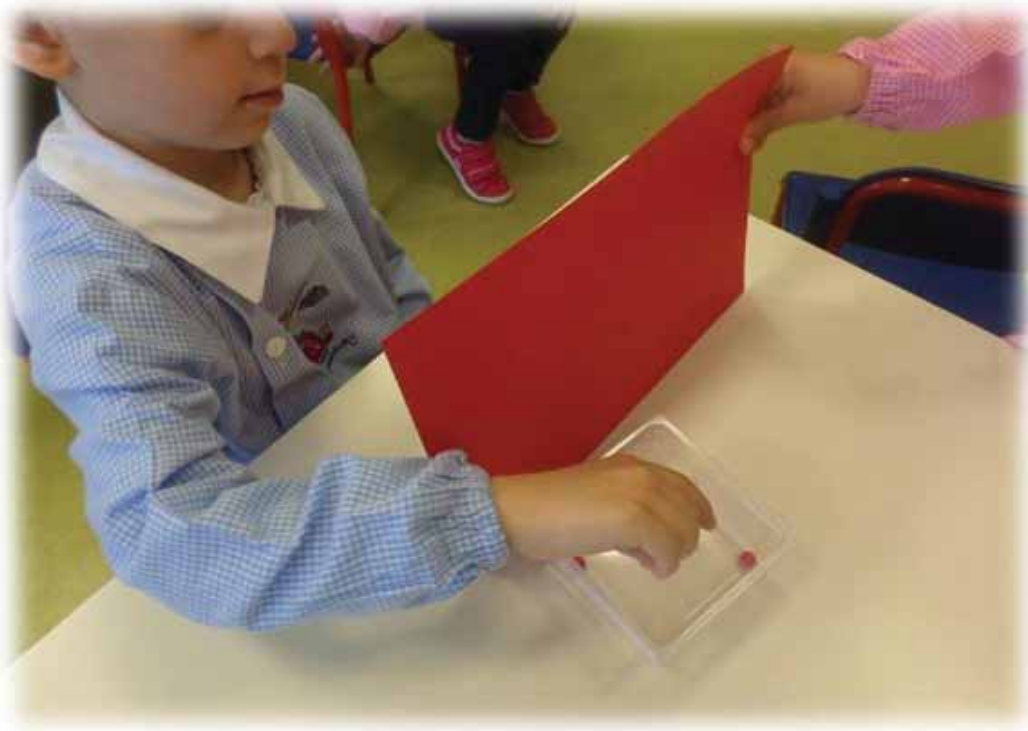
It's easier that the head class is a boy or a girl?

It's possible that is a boy?

It's more possible that is a girl?

It's probable that is a girl?

Let's use the little balls: the answers are different the majority said girl and the words "possible" and "probably" have created some uncertainty but ... we begin to know them!



GAME: THE BEAUTIFUL STATUES

At the begin of the game we answered: "Can win only one child?
it is sure or possible? "

"can win a 3 years old child?"

"no, they were eliminated!"

"So it's sure that they can not win?" "yes" »

"So it isn't possible?" "no"

"So if is not possible we can say that is *impossible*"

Can win a 3 years old child? is *possible* or *impossible*? "

The child remain are two boys and two girls of 5 years old,

"It is possible that the winner is a girl?" "yes"

It is possible that the winner is a boy?" "yes"

"Who has the bigger possibility?" "The same"

"Why?" "Because the boys and the girls are in equal number".

A girl is eliminated.

"And now?" "The boys are in major number"

"So it is possible that a boy wins?" "yes"

"When is a lot possible we can say *probable*"

The game is made more times. the different situations which may be submitted make it out of the following questions similar to previously to consolidate the proposed concepts.



GAME: WOLF OR CANDY?

the children run a path and arrive at a crossroads.

They should respond to a riddle.
If they guess they can 'catch a ball from 2 boxes.



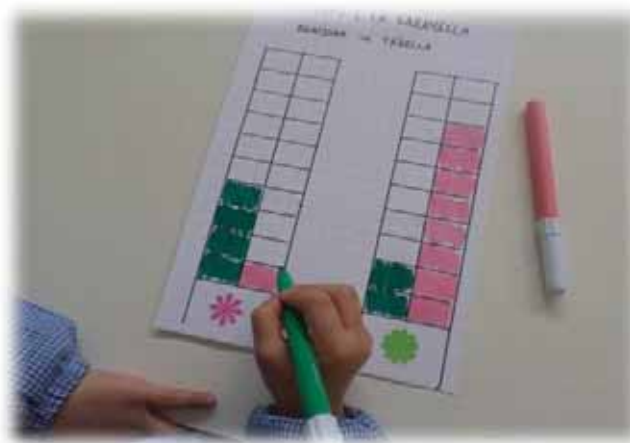
Green → Wolf



Fuchsia → Candy

RESULT:

almost all children have caught the box with more balls pink. We register the data in the table and then we comment together.



GAME: DICES

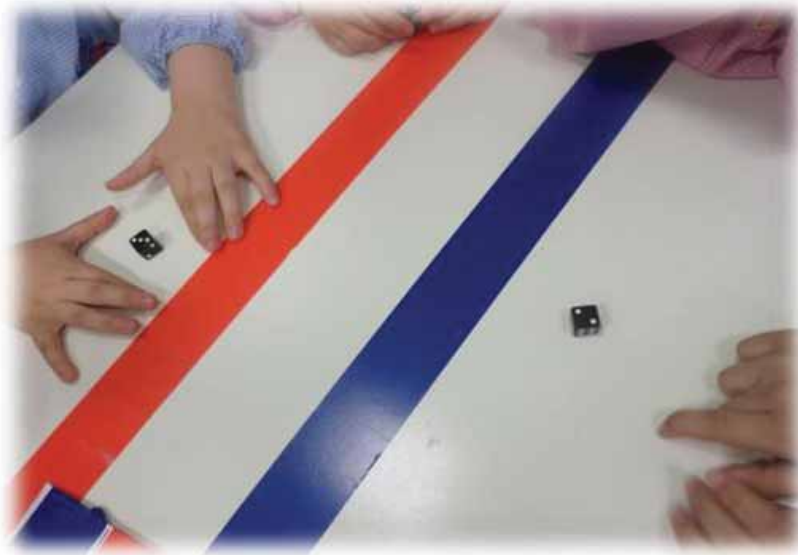
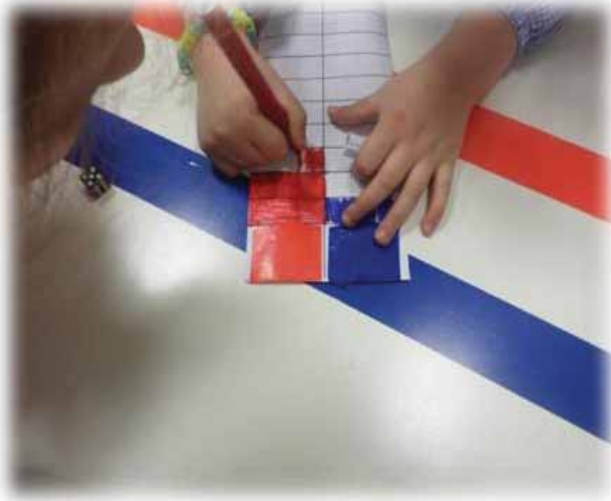
Two teams formed by 7 children: RED TEAM and BLUE TEAM.

Stimulus questions: "who will win"? "the red ones!"

"can the blue team win now?"

a blue player: "I want this but it is difficult!"

After a lot of this game the children have been improved their ability to deduct the result. With a 4-1 score they said: "no need to pull, we lost!".



VARIANT OF THE GAME:

the red team spears one dice and the blue team spears two dices.

Who will win? “The red team for sure!”

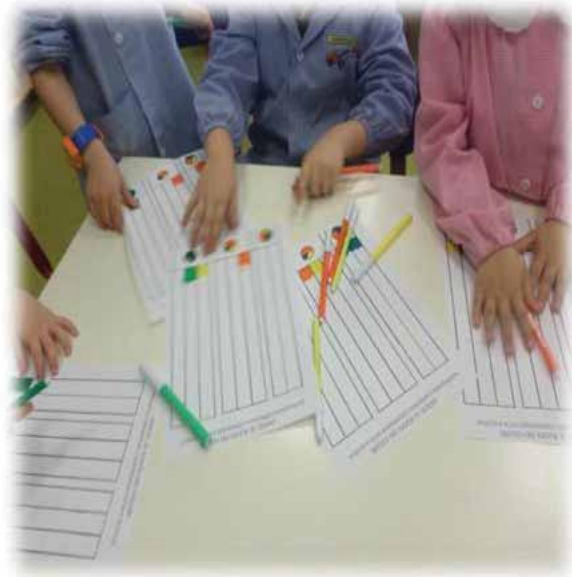
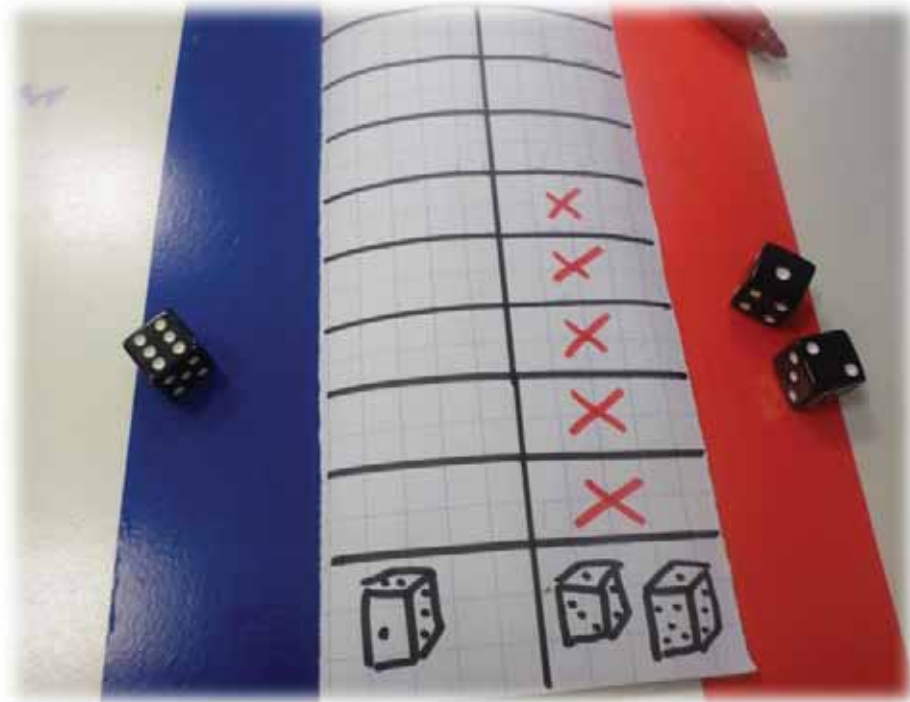
Let’s register it in a table... the game is won by the red team, but we notice that even blue have won any duel!

GAME: THE COLORS WHEELS

We provide 3 different colored wheels .

The children before rolling the wheel have to speculate the color which can exit.

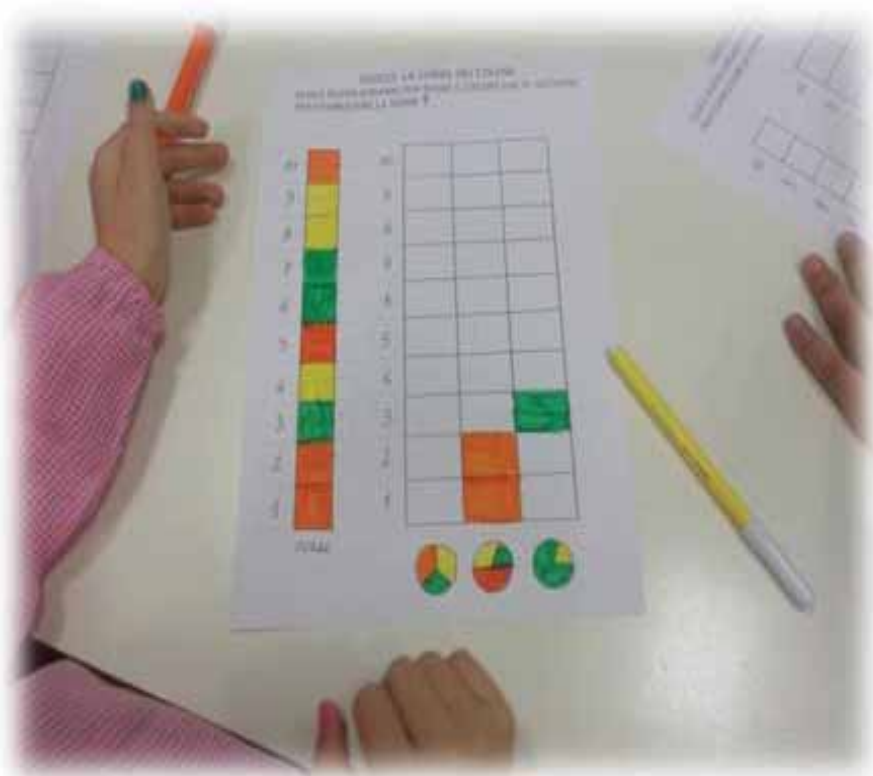
We register in table and then we analyze the table.



GAME: THE TOWER OF COLORS

Which wheel we have to spin to have the color which we need to form an equal door?

Let's register in a table.



GAME: PAY ATTENTION TO THE RAVINE!

Let's know the *RISK*.

You play with two teams.

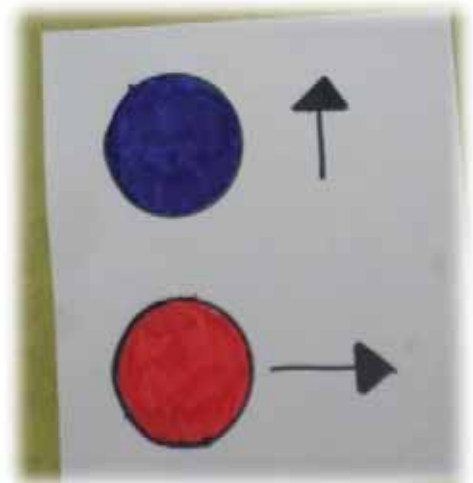
- The letter P is the start
The castle is the arrival
- The shift team throws the coin:

BLU makes a step forward,
RED takes a step to the right.

- Those arriving in one of the peripheral squares can decide to stop or try the fate: beyond the edge there are crocodiles and sharks ...

Upon arrival at the border, you have to choice after you have assessed the risk.

ALMOST ALL CHILDREN HAVE TRIED THE FATE!



At the end of path we can divide the behavior of children in three levels:

1st level: children have no experience of the concept of probability, they answer for imitation or to "please" the teacher, they choose by their taste.

level 2: the children warned at the different results, the multiple or minority indicators in the various games, it was not easy to condition them.

level 3: the children made the most competent forecasts, make the best choices addressed by more or minor indications of probability. However allows an excellent awareness and they really can motivate their choices.

Estonia – Sillaotsa School – Haaslava Parish, Päkste village – Tartu County

WHAT ARE THE CHANCES: *This is the fifth standart gain in the “Good Start, Grow Smart” that introduce our child to how to collect, organize and interpret information.*

Age of Children: 6-7

Topic: Counting and comparison

Learning Objectives:

- counts objectives 1-12
- compares amounts, using the words more, less, smaller, bigger, equally.

Needed learning tools/materials:

different things; signs: $>$, $<$, $=$ different maths cards:
for example $2=2$; $4 < 6$

Learning activities: Children collect different toys from the room. They take a maths card and solve the maths task using the toys.



From 20th March until 24th March 2017 in ESTONIA, Sillaotsa School – “Short-term joint staff training”

Age of Children: 6-7 year

Learning areas: Mathematics and language development

Topic: math stories (how to create together math stories and animations).

Learning Objectives:

- The child is capable of using mathematical apps independently.
- The child is able to convey its thoughts in oral speech by making a mathematical story with freely selected characters.
- The child forms independently a mathematical calculation with numbers up to five by asking a question from its group members.
- The child solves a task and finds the correct number on the tablet.

Activity description:

- Every child choosed a label with a mathematical operation. ($2+3=5$; $4-2=2$) and created a mathematical story.
- Every child opened *My Scene app in iPad*, choosed a scene and created a story. If ready, they told the story. Other children opened *Learning numbers* app and found answers for the maths questions in the story.



My Scene app description: My Scene helps to develop perception among toddlers aged 2+ years old. With the of teachers it can also develop language skills and imagination through the creation of a story. Each board features a background for a scene. Press and drag the elements shown below into the background creating your



visual help

very



own colorful scene.

Learning numbers app description: App for learning numbers in Estonian speaks and shows numbers.

- Numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 0

- Shake the device or tap smiley face ":-)" to shuffle the numbers and change background and number colors.



Children's age: 5-6 year

Learning area: Mathematics

Topic: programming (how children programmed with Bee-bots).

Learning Objectives:

- The child determined the location of the object in relation to another object (bottom, top, center, right, left)
- The child determined right and left side.
- The child navigated according to the given directions on a flat surface. The child counted numbers to ten.



Bee-Bot app description: The app is a virtual opportunity to play with a Bee-bot, programming him to move across different pathways, based on the buttons children choose. The app has been developed with 12 levels encouraging progression. The challenges get harder as children work through them. As with

the physical Beebot toys there are lots of opportunities for children to communicate how they think they need to get the robot to where he needs to be.

Bee-Bot robots - Directional keys are used to enter up to 40 commands which send Bee-Bot forward, back, left, and right. Pressing the green GO button starts Bee-Bot on its way. Bee-Bot blinks and beeps at the conclusion of each command to allow children to follow Bee-Bot through the program they have



entered and then confirms its completion with lights and sound.

Activity description:

- Children were in two groups. Bee-bot group and iPad group.

- **Bee-bot group:**

Children chose a label with a number, then found a place on the mat. After that programmed the Bee-bots.

- **Ipad group :**

Children used Bee-bot app from the easy level to more difficult.



Children's age: 4-5 year olds (group name- *Marakratid*)

Learning areas: Mathematics

Topic: numbers (how numbers work and how they relate to each other)

Learning Objectives were:

- The child compared amounts and decided which is bigger or smaller.
- The child counted numbers to 10.
- The child matched the amount with the number.

Little Digits app description: Little Digits is a fun educational app that teaches children about numbers by putting a new spin on finger counting. Using the iPad multi-touch screen, Little Digits displays number characters by detecting how many fingers you put down. Children can learn to associate the number on the screen with the number of fingers they place down, while enjoying the unique characters and animations of the Little Digits world.



Features:

- Counting to 10 with your fingers
- Number order; 0 to 10 and back

Activity description:

- Children opened *Little Digits app in iPad. There are animal pictures on the table with numbers from 1-10.*

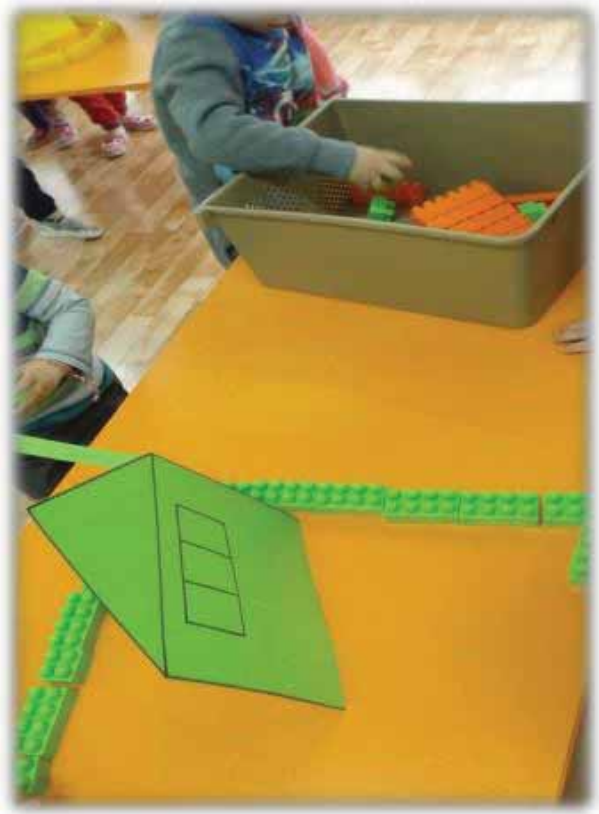
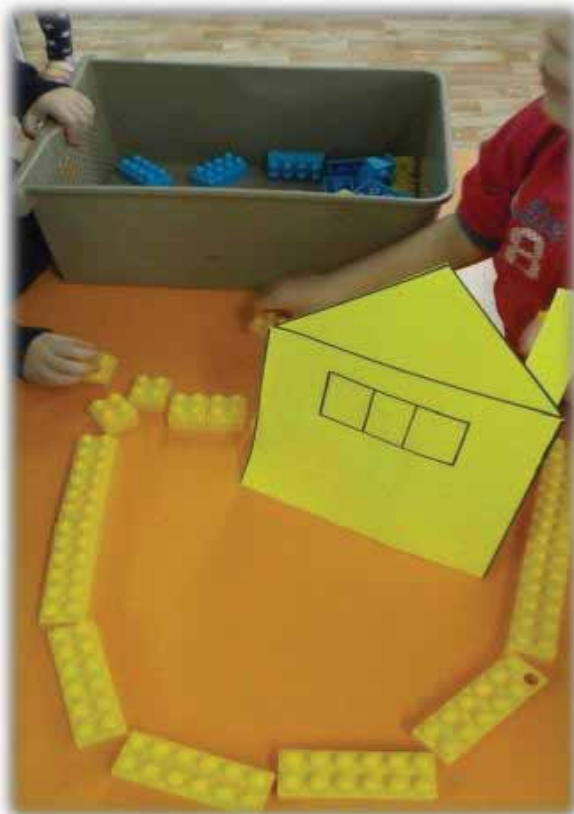
Child chose a picture and showed the number to others. Other children had to touch iPad with so many fingers as the number is. iPad showed and told the number.



Bulgaria – CDG 29 “Lubimka” – Dobrich

"Houses of the three Little Pigs"

Harnessing the skills of arranging objects
by color.



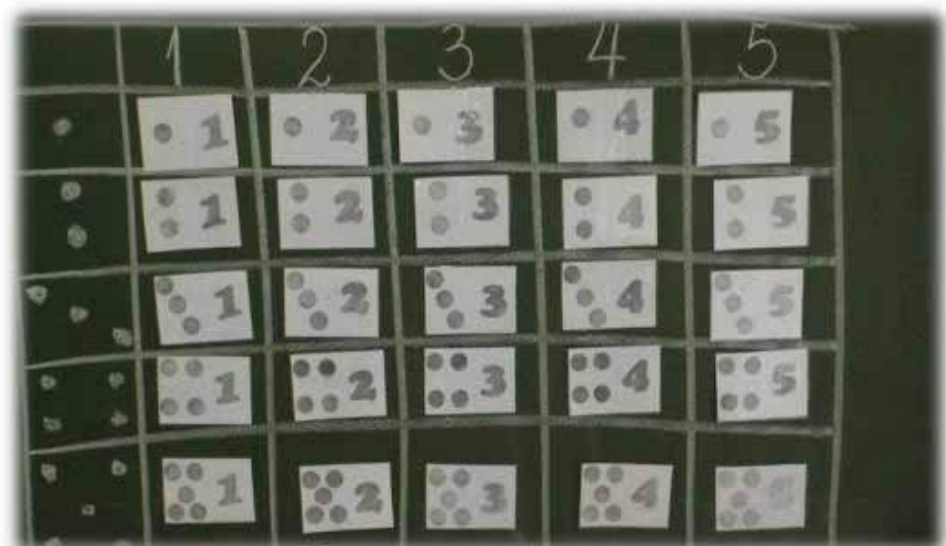
“Colored alley”

Consolidate the children’s skills for comparing and sorting geometrical shapes.



"Domino points and numbers"

Improving the skills of the children to reference quantities (in schematic form) and figures of the numbers to 5.



“Shop”

1. Guidance child columns and rows.
2. The children have to orient in columns and rows.



"March surprise"

Referencing of colors and numbers.



"Guess the number of geometric shapes in the pictures"



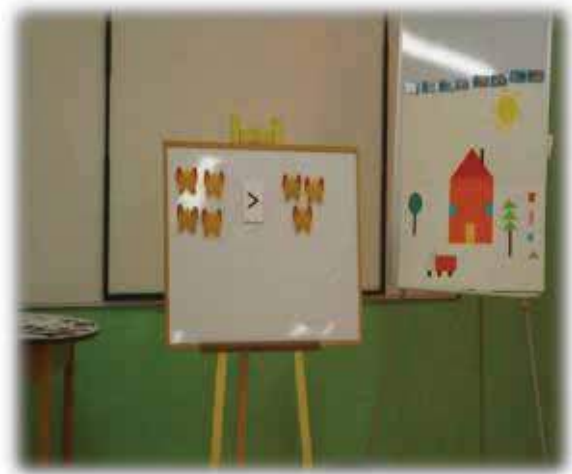
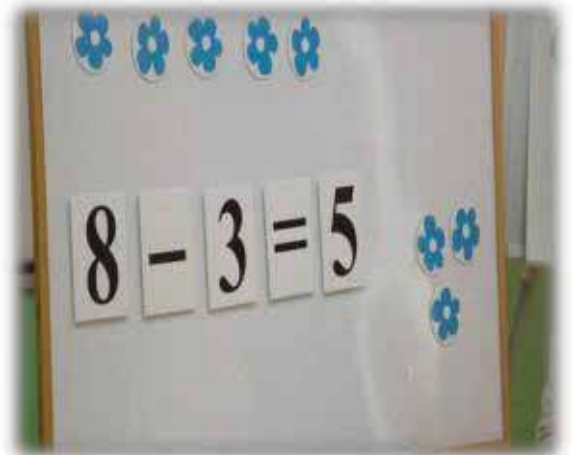
"Tangram"

Developing analytical and synthetic thinking and spatial imagination by geometric shapes.



“Tasks-teasers”

1. Formation of elementary notions of tasks with addition and subtraction through modeling situations.
2. Compares quantities of groups and refer to the quantitative relations.





Funny mathematics.

Working with children and parents.







France – École Les Moulins – Barbentane – Provence, Alpes – Côte d'Azur

Moving pawns on a board game

3/4 years olds

To explore the world

To find our way in space

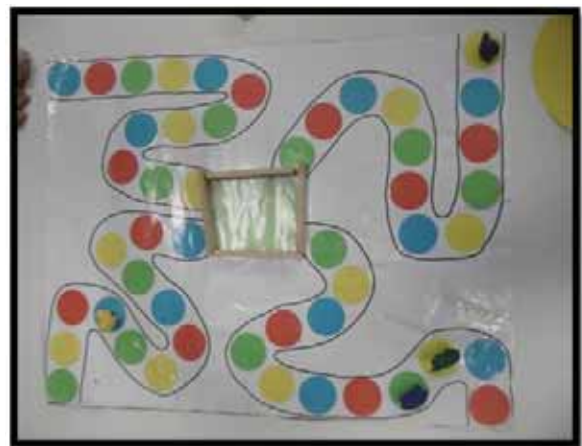
- moving around on a guided treasure hunt
- playing with two dices: reading the information

Organisation :

- Guided game with 4 to 6 children

Material :

- 12 cardboard forms (squares, triangles, circles),
- a dice with 3 colours (green, blue, red)
- coloured from 6 plastic animal pawns (chicken, pig, rabbit, cat, dog, cow)
- a dice with the six animals
- a game board made by the teacher



➤ **Step 1 : moving the pawns to a given square**

- Construct two distinct paths with the equipment provided: squares, triangles, and circles. Each path is made of 6 squares. A parc for the animals marks the end of both paths. Four animals are already placed in this park and wait for their friends. Only the cat and the pig will travel on the paths.



- Find the start and finish squares of the two paths. Find the colour dots on the squares of the paths. Place the cat and the pig at the start of each path.
- Start playing to understand the rules of moving the pawns forward. The pig and the cat each move in turn. Throw the colour dice and move the pawn to the first square of the colour indicated by the dice.

⇒ **The objective of the game is to find out which animal (the pig or the cat) will be the first to arrive at the parc.**

➤ **Step 2 : playing with two dices**

- Construct a single path with all elements (forms) and use the colour dice and the animal dice. Place the 6 animals at the starting point.



- Throw the two dices and move the animal shown on the dice according to the rules in step 1.
- Compare the progress of each animal. Which of the animals is closest to the arrival point?

⇒ The objective of the game is to know which of the animals will be the first to arrive at the parc.

➤ Step 3: moving a character on a represented course

- Draw 4 colour paths on a cardboard. Stick 12 coloured forms on each path, using the same rhythm of colours yellow, red, green, and blue. Place an animal at the starting point of each path. Two animals are already in the park and wait for their friends. Use only the colour dice. The animals move forward one by one.



- Recognise the éléments of the game in steps 1 and 2. Find the start and finish squares of each path. Show the direction of the course.
- Throw the colour dice and move the animal to the next square of the colour indicated on the dice.



⇒ **The objective of the game is to know which of the animals will be the first to arrive at the parc.**