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„SCIENCE IN OUR LITTLE HANDS” Erasmus +





Piła 2016-2017

Gry liczbowe Numeral games

LESSON I

What are we doing?	Creating numeral games using dices: GAME'S NAMES Beetle, Counting sticks, Machines, Round
What do we need?	Work card nr 1 „Beetle”, pen, counting sticks - 1 m long stick with 10 cm scale, machine made of different objects and materials in our close surroundings such as. cartons, colorful paper, paints, 2 dices , work card nr 2 „Adding round”, work card nr 3 „Subtraction round”, „Penguins' land” board game, pawns, "Sky full of stars” board game.
How to do it?	<p>Steps: <u>Step I Creating a game</u> „Beetle” - the player rolls the dice - in order to draw (6) parts of the „beetle” the player has to hit numbers in correct order- from one to six - the winner is the first person to draw the "beetle" "Counting sticks" - the player rolls the dice - the winner is the person who shows the result first "Machines" - the player puts the dices into the machine - the winner is the person who first counts the sum on the dices. "Round in a group" - the player rolls the dice - -the winner is the person who first counts the sum on the dices. "Round in pairs" - the player rolls the dice - the winner is the person who first counts the sum on the dices. "Individual round" Work card nr 2 „Adding round” - the player rolls the dices - a player writes the numbers hit with the roll in table on pieces of paper. - the player sums up the numbers hit in the roll and writes the sum</p>

down.

Work card nr 3 „Subtracting Round”

- the player rolls the dice
- the player subtracts the numbers hit in the roll and writes the sum down.

Board game in pairs Penguins' land

- players take turns throwing 2 dices.
- the game is started by the first player who is the first to hit the sum of 10 on the dices.
- players may add, subtract or choose the number from one of the dices, and move his or her pawn the number of times he or she hit on the dice.
- the winner is the first to reach to the finish-line.

Board game in pairs „Sky full of stars”

- players take turns throwing dices.
- after throwing dices player adds or subtracts the number the numbers on the dices and puts his or her pawn on a field with the same number
- the winner is the one who puts more his or her pawns on the board.

Stage II Let's play

Step I Creating games

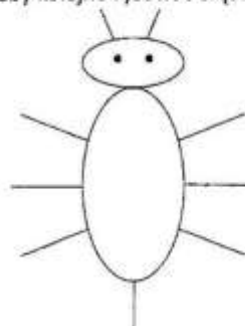
Etap II Playing

„Beetle”



W swojej kolejce gracz rzuca raz kostką.
Trzeba rzucać liczby w określonej kolejności, żeby kolejno rysować części „żuczka”:

- [1] – tułów
- [2] – głowę
- [5] – jeden czótek
- [5] – drugi czótek
- [4] – prawe oko
- [4] – lewe oko
- [3] – trzy nogi z prawej
- [6] – ogonek
- [3] – trzy nogi z lewej



Wygrywa ten, kto narysuje najszybciej swojego żuczka.

Counting sticks



Machines



Round in group



Round in pairs



Individual round

Work card nr 2 „Round - adding”




Addition

Roll the dice and write in the dice 2 numbers, write the correct sum

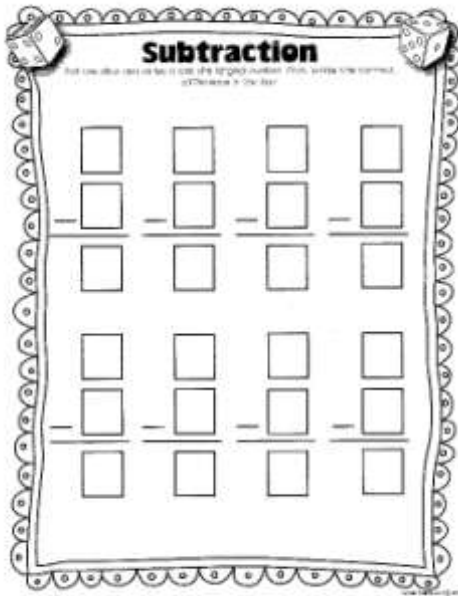
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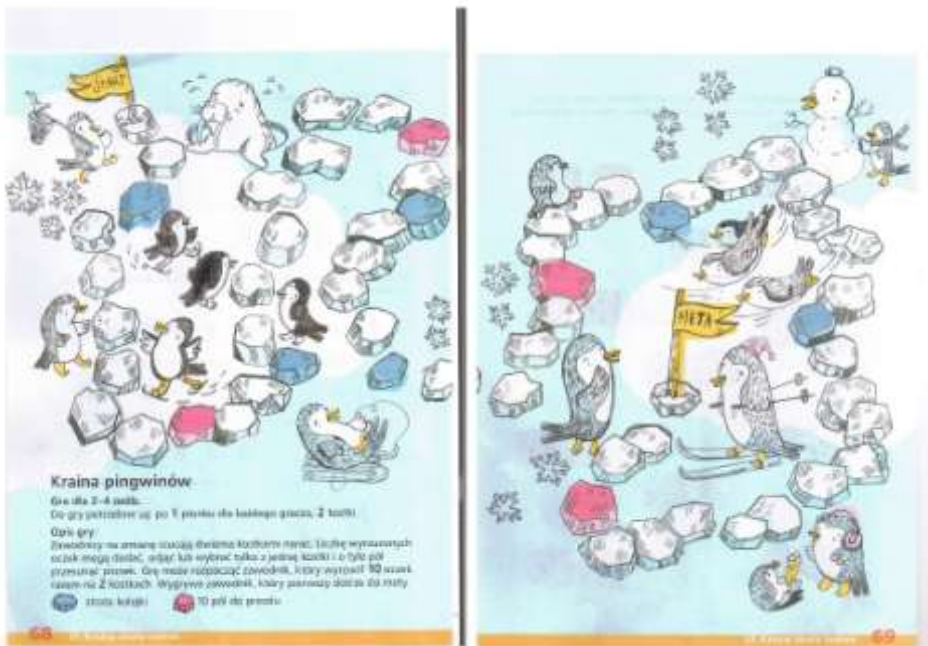
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Work card nr 3 „Round subtraction”



Board game in pairs Penguins' land



Board game in pairs „Sky full of stars”



<h2>Geometria</h2> <h2>Geometry</h2> <h3>LESSON III</h3>	
WHAT ARE WE DOING?	We are observing geometrical figures outside.
WHAT DO WE NEED?	Lego bricks, instruction, tablet dummy, geometrical figures cut out of color paper, sketches of geometrical figures, newspapers, scissors, glue, colorful blocks, photos of buildings in Piła, camera, interactive board.
HOW TO DO IT?	<p>Stages:</p> <p><u>I Free Lego bricks building</u> - students create their own structures out of Lego bricks.</p> <p><u>I Free geometrical figures building</u> - Using geometrical figures students, in pairs, create structures on</p>

tablet dummies.

- Using glue, students attach the structures onto tablet dummies.

II Stimulation of spatial imagination

- the teacher hands out work cards with sketches of geometrical figures.

- students cut things and people out of newspapers.

- students put their cut outs in the shapes of geometrical figures

- Using glue, students attach the cut outs onto work cards.

II Following the scheme.

- Students choose the instruction of the construction

- they follow the instructions to build something out of Lego bricks.

III Observing geometrical figures outside.

Constructing buildings of Piła out of colorful numbers

- students watch photos of buildings from our city

- they construct buildings of Piła out of colorful numbers

City trip

- students go to the city centre to watch the most interesting buildings of our city

- they look for geometrical shapes in the building

- the teacher takes photo shown by the students

Looking for geometrical figures in the photos.

- Using interactive board teacher show photos taken during the trip

- students indicate geometrical figures on the photos.

I Free Lego bricks building



I Free geometrical figures building



II Stimulation of spatial imagination



II Following the scheme



III Observing geometrical shapes outside.

Constructing buildings of Pila out of colorful numbers



City trip



Looking for geometrical figures in the photos



Matematyka w działaniu Maths in action

LESSON VI

WHAT ARE WE DOING?	Improving spatial orientation, solving problems in real life.
WHAT DO WE NEED?	Garden chess- mat, 2 sets of chess cards, sets of mathematical problems, markers, erasers , „Work card nr 4 „, Text math problems– Lego”, Lego bricks
HOW TO DO IT?	<p>Stages:</p> <p><u>I Field game</u> <i>Hare and hounds</i></p> <ul style="list-style-type: none">- teacher divides class in two groups.- prepares sets of tasks for group nr 1- go into the woods leaving tasks for group nr 2- group nr 2 follows group nr 1 solving mathematical problems. <p><i>Hare and hounds</i></p> <ul style="list-style-type: none">- prepare sets of tasks for the students- go into the wood and let students solve mathematical problems- find hidden treasure- Lego bricks <p><u>II Visualisation of spillkins movements</u></p> <ul style="list-style-type: none">- set spillkins on the chessboard- move around according to the movement of spillkins on the check board. <p><u>III Illustrating math problems</u></p> <ul style="list-style-type: none">- hand out spillkins cards and math problem- illustrate the math problem given- solve the problem- give answers. <p><u>IV Illustrating math problems and solving it using lego bricks.</u></p> <ul style="list-style-type: none">- hand out cards to students- illustrate math problem using Lego bricks.- solve the problem- give answers

I Conduct field game

Hare and hounds





Hare and hounds



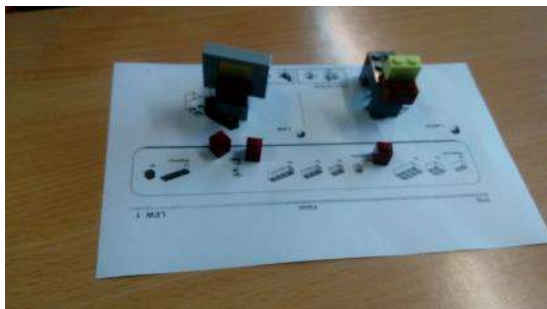
II Visualisation of spilkins movement



III Illustrating math problems



IV Illustrating math problems and solving it using lego bricks.



Szachy Chess

LESSON VII

WHAT ARE WE DOING	We are learning how to play chess
WHAT DO WE NEED?	Chess, Book „Szachy - Nauka gry dla dzieci”, plasticine, garden-chess- mat, instructions
HOW TO DO IT?	<p><u>I Learn the rules of chess</u></p> <ul style="list-style-type: none">- how is the chessboard built- getting to know spillkins- learning the rules- simulation of a game on the basis of book „Szachy - Nauka gry dla dzieci” <p><u>II Starting „Elite Chess Club”</u></p> <ul style="list-style-type: none">- integration of group of students who know how to play chess in our school- organization of chess tournament for the title of „school’s chess instructor”- creating net of connections between the members of „Elite Chess Club” <p><u>III Organization of chess tournament.</u></p> <ul style="list-style-type: none">- getting to know chess master- Presentation of members of „Elite Chess Club” and rules of the club- chess tournaments between students and members of the club- handing our leaflets encouraging to start playing chess.

I Learn the rules of chess





II Starting „Elite Chess Club”





Computer games	
Lesson IX	
WHAT ARE WE DOING?	We start an account at learningapps.com. and create our own mathematical games.
WHAT DO WE NEED?	Computers with Internet connection, learningapps.org account
HOW TO DO IT?	<p><u>I Sign up and create an account</u></p> <p><u>II Make games</u></p> <p><i>Kinds of games: find pairs</i> Player finds the same mathematical signs http://LearningApps.org/2805031</p> <p><i>Kind of game: matching pairs</i> Adding to 5. Sums up and chooses the correct picture showing the answer http://LearningApps.org/2805547</p> <p><i>Kind of game: horse race</i> Adding to 7. Solving mathematical equations. http://LearningApps.org/2853861</p> <p><i>Kind of game: uncover a picture</i> Adding and subtracting to 7 http://LearningApps.org/2853439</p> <p><i>Kind of game: matching pairs</i> Adding to 10 using cubes. Sums up and chooses the correct picture showing the answer http://LearningApps.org/2832579</p> <p><i>Kind of game: matching pairs</i> Adding to 10 using dices. Counts the scores on the dices and matches them with correct mathematical problems http://LearningApps.org/2832573</p> <p><i>Kind of game: singular choice test</i> Comparing numbers to 10 using $>$, $<$, $=$ signs. The player chooses the correct symbol. http://LearningApps.org/3269125</p> <p><i>Kind of game: singular choice test</i> Comparing results of subtraction equations to 10 using mathematical signs. The player chooses the correct symbol. http://LearningApps.org/3269192</p> <p><i>Kind of game: singular choice test</i></p>

Comparing results of adding equations to 10 using mathematical signs. Player chooses the correct symbol.

<http://LearningApps.org/3269872>

Kind of game: uncover a picture

Adding to 10.

<http://LearningApps.org/3309227>

Kind of game: matching pairs

Adding and subtracting to 10. Player matches the equations to the results.

<http://LearningApps.org/display?v=pkj150ofc16>

Kind of game: uncover a picture

Adding and subtracting to 10.

<http://LearningApps.org/3309689>

<http://LearningApps.org/3309487>

Kind of game: uncover a picture

Dividing numbers into even and odd numbers.

<http://LearningApps.org/3309857>

Kind of game: matching pairs

Adding the scores on the dices to 20 and choosing the correct answer

<http://LearningApps.org/3270364>

Kind of game: uncover a picture

Adding numbers to 20 and solving mathematical problems

<http://LearningApps.org/display?v=p3yr22awk17>

<http://LearningApps.org/display?v=p3ejf966a17>

Kind of game: uncover a picture

Subtracting numbers to 20 and solving mathematical problems

<http://LearningApps.org/display?v=piweaony317>

Kind of game: uncover a picture

Adding and subtracting numbers to 20 and solving mathematical problems

<http://LearningApps.org/display?v=pigkvgifc17>

<http://LearningApps.org/display?v=p8boi2qtv17>

<http://LearningApps.org/3309546>

Kind of game: matching pairs

Telling the time on a clock. Matching clocks time with the correct time.

<http://LearningApps.org/3269912>

Kind of game: horse race

Telling the time on a clock. Showing correct answer.

<http://LearningApps.org/3270170>

Kind of game: matching pairs

Counting money.

<http://LearningApps.org/3274458>

Kind of game: millionaire

Solving mathematical problems with use of adding and subtracting . Students read the task and give correct answer.

<http://LearningApps.org/display?v=pzu73swqn17>

Kind of game: singular choice test

Subtracting mathematical problems. Students read the task and

give correct answer.

<http://LearningApps.org/display?v=pjjk18uxc17>

Kind of game: singular choice test

Adding mathematical problems. Students read the task and give correct answer.

<http://LearningApps.org/display?v=pm19fd3sa17>

III Using mathematical games

I Signing up and creating an account



II Creating games

III Using mathematical games

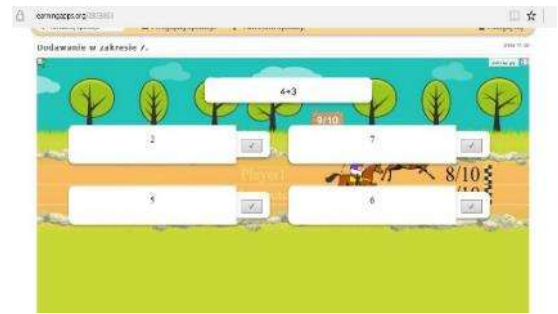
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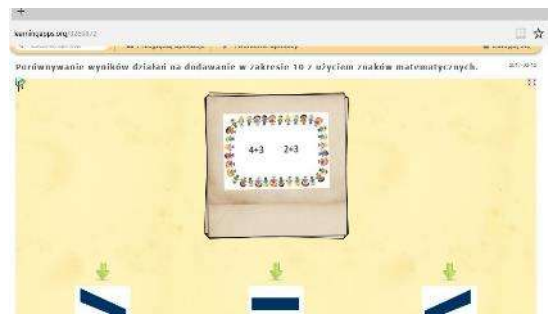
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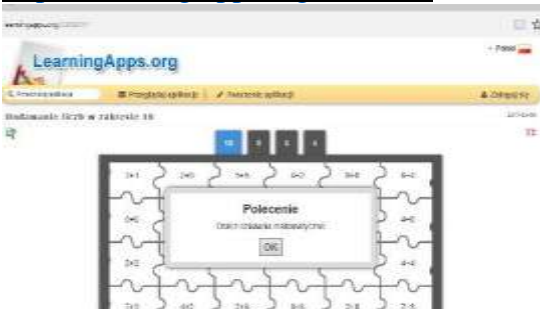
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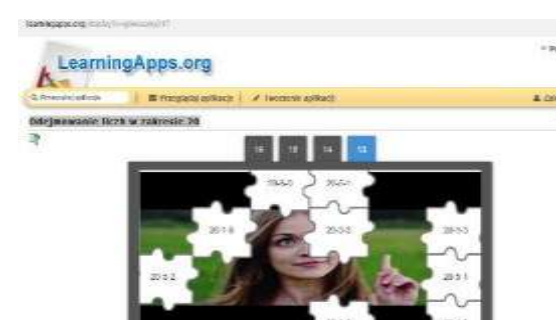
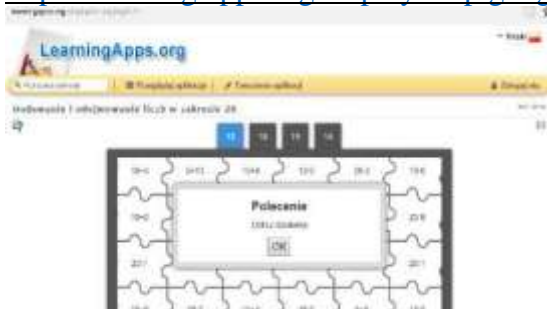
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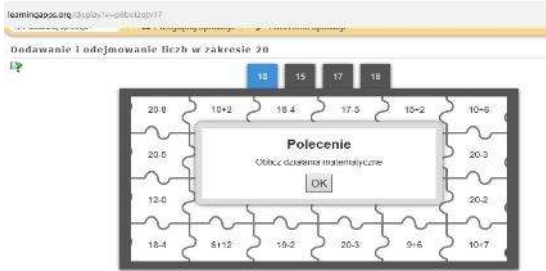


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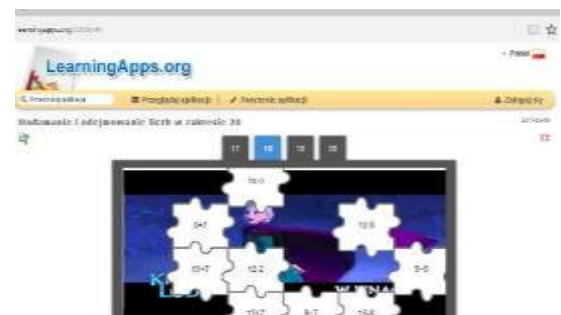




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Working methods:

GIVING: Explanation, description, talk

EXPOSING: show with experience, exposition

PRACTICAL: indication, subject exercises

PROGRAMMING: using computers

ACTIVATING: learning games

Forms: collective, group, individual

Środki: mentioned above

Group: 17 1st grade students

Location: Szkoła Podstawowa nr 12 z Oddziałami Integracyjnymi w Pile.

Ideas: books, teachers' imagination.