Innovate Together Collection of Numeracy Activities

Ideas for teachers and other educational professionals how to use board games, outdoor games and digital technologies in teaching, implemented in the Erasmus+ project Innovate Together, 2017-2019 (suitable for teaching ages 6-15)

Erasmus+

Contents

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Board Games


INNOVATE TOGETHER

Innovate Together Board Game

Innovate Together Board Game is a game created by students from all project participant countries, led by their Mathematics and Class teachers.

The printables can be used with any blank board game template, which you can adapt to your needs, adding some additional fields of your choice. On the following pages, you can find cards with tasks to practice the usage of fractions, regarding each of seven partner countries of the project Innovate Together. You can also find printable play money. The cards and the money are to be printed on paper of two colours – one colour marking earnings (=you receive) and another colour marking debt (=you pay). fields (as illustrated above). Players take turns to roll a dice and play, as well as to take a card and do a task after coming to a corresponding field.

Please find pictures of cardboard templates used during Innovate Together Numeracy Week 2017 and 2018. The game has also been regularly used within Mathematics classes and extracurricular activities at all schools, participants of the project Innovate Together.

A board game template created by students in Croatia.

Your sister is getting married. Give her a trip to Faenza as a present. The value is 1/4 of 2 000 kn.

You're buying travel insurance for a trip to Loureiro. The price is 1/2 of 460 kn.

Winter is coming and you need a new jacket for your trip to Legnica. The price is 1/3 of 800 kn.

You want to send a present to your friend from Limassol. The price you have to pay at the post office: 2/3 of 120 kn.

You're buying two books to give as a present to your friends from Houghton-le-Spring. The price: 1/2 of 1 040 kn.

You are buying a bus ticket from Bucharest to Galati. The price: 240 kn x 2.

You are buying an Italian pizza at a restaurant in Čakovec. The price: 1/4 of 160 kn.

Your friends from Poland are coming. Buy some sweets – 1/2 of 100 kn.

You need to buy a geometry kit to calculate the distance between Limassol and Porto: 2/3 of 60 kn.

You are on a trip in Poland. Buy a magnet for your brother. The price: 1/5 of 50 kn.

Donate for charity: 2/3 of 200 kn.

You want to help your parents and be able to chat with your friends from six countries – pay a monthly bill for the Internet: 2/3 of 270 kn.

The whole family is going to Cinestar, to see a new James Bond film, made in the UK. The price of the tickets is 3/4 of 200 kn.

Buy your friend lunch: a Portuguese sandwisch Francesignha.
The price: 1/2 of 60 kn.

The new FIFA 19 with Christiano Ronaldo has just been released. The price: 1/3 of 400 kn.

You had been walking a lot on your trip to Romania, so you need new shoes.
Price: 1/2 of 440 kn.

Help your friend in trouble. He has lost a ticket for a Shakespeare theatre show. The price: 1/3 of 90 kn.

Donate for charity: 1/3 of 450 kn.

Pay a membership fee for the Music School of Fado: 1/2 of 300 kn.

Pay a membership fee for the Dance School of Sirtaki: 1/4 of 600 kn.

It is your birthday. Each player gives you 50 kn as a present.

Tax refund is here. You can take 1/2 of 700 kn.

Your grandma is back from Italy. She gives you the amount of 100 kn x 2.

You've just got a raise: 1/3 of 1 200 kn.

It is the sales season. You've been shopping and you've saved 1/2 of 640 kn.

Your savings deposit expired. You get a rate of interest - 210 kn.

You've been preparing food supplies for your trip to Romania. You're buying only items on weekly sales. You save 1/2 of 240 kn.

At the end of the season, your Innovate Together Football team is the best in its league. Award to each player: 1/10 of 1 000 kn.

You have just won the Innovate Together Maths Competition: main award - 100 kn + 1/5 of 100 kn.

You've got a raise. Take 200 kn x 2.

You've washed your neighbours' window. Award: 1/5 of 100 kn .

You've mowed the lawn. Award: 1/3 of 90 kn

You've cleaned the bathroom. Award: 1/4 of 160 kn.

You've dusted the fireplace. Award: 1/3 of 150 kn.

You've raked all the leaves in the yard. Award: 1/3 of 60 kn.

You've tidied up your room. Award: 2/3 of 30 kn.

You've prepared delicious sandwiches with Italian cheese for your family. Award: 1/3 of 90 kn.

You've plowed the garden. Award: ½ of 100 kn.

You've tidied up your wardrobe and sorted winter and summer clothes. Award: 1/2 of 60 kn.

You've done babysitting for your neighbour. Award: 50 kn

200	200
100	100
50	100
20	20
10	10
10	10

-200	-200
-100	-100
-50	-100
-20	-20
-10	-10
-10	-10

North East Local Landmarks Snakes and Ladders

A board game template used in the UK

In Portugal, they used Innovate Together board game question cards with templates they also use for French, maths and chemistry lessons, proving how easily our cards can be combined with most board game templates.

A board game template used in Poland. The same template was used for Puss in boots game, played according to different rules, described on pages 47/48.

A board game template used in Cyprus.

In Romania and Italy, templates and additional tasks from this site (https://www.mathfox.com/math-activities/7th-grade/board-games/) were used, also for the lesson held at the Portugal school, during our LTTA in March 2018.

Chapter II
Innovate Together
New Games

II. osnovna škola Čakovec

“I Love Međimurje” Board Game

RULES

THE AIM OF THE GAME

In this game, the aim is to reach number 100 before other players. It is necessary to answer a question on each field correctly. The track also contains special fields with specific rules, so you will have to go back, miss a turn, answer more questions correctly or skip a few fields on the board, after providing a correct answer to the given question.

GAME PREPARATION

1 Each player chooses one figure to play with.
2 Place cards with questions and answers next to the board, with the side with text face down.
3 Roll the dice to decide who starts the game. The player with the highest score starts the game.

The game starts on the field START.

IT'S YOUR TURN

1 Roll the dice!
2 Move! The number on the dice determines the number of places the player moves its figure.
3 When you stop on a field, answer the question or will be asked. One of the other players has to take the first card from the top of the cards and read the question aloud.

CORRECT ANSWER

If you answer the question correctly, you roll the dice again and answer a new question. As long as you keep answering the questions correctly, you can roll the dice and move on and on.

WRONG ANSWER

We are sorry! You stop playing until it's your turn again. The player on your left rolls the dice and plays.

SPECIAL FIELDS

FIELDS WITH A QUESTION MARK

When you get to the field with a red exclamation mark (10, 21, 34, 47, 50, 55, 60, 75, 93, 97), you have to answer two questions correctly. You continue the game only after answering both questions correctly. If you offer only one correct answer, or you gave the wrong answer to both questions, the game is further played by the player on your left. When it's your turn again, you answer two new questions and continue in case of correct answers.

FIELDS WITH TWO-WAY LADDERS

FIELD 41 – If you answer the question correctly, take the ladder to the field 44. On field 44 you have to answer one more question. If you answer correctly, you roll the dice again and continue the game. If you give the wrong answer, you go back on the field 41 and the player on your left takes the turn.
If you give the wrong answer on the field 41, you stay on that field and the player on your left takes the turn. When it' your turn again, you roll the dice and move the figure for the number of places corresponding the number on the dice.

FIELD 44 – If you answer correctly, you roll the dice and continue the game. If you give the wrong answer, you go back by the ladder to field 41 and the player on your left takes the turn.

FIELD 44 – If you answer correctly, you roll the dice and continue the game. If you give the wrong answer, use the ladder to go back to field 41 and the player on your left takes the turn. When it's your turn again, you roll the dice and move the figure for the number of places corresponding the number on the dice.

FIELDS WITH ONE-WAY LADDER

FIELD 5 – If you answer the question correctly, use the ladder to get to field 19, where you have to answer a new question and continue the game depending on your answer. If you give an incorrect answer on field 5, you stay on the same field and continue the game depending on your answer. If you give the wrong answer on field 5, you stay on the same field and the player on your left takes the turn. When it's your turn again, you roll the dice and move the figure for the number of places corresponding the number on the dice.

FIELD 48 – If you give the correct answer, use the ladder to get to field 59, where you have to answer a new question and continue the game depending on your answer. If you give the wrong answer on field 48, you stay on the same field and the player on your left takes a turn. When it's your turn again, you roll a dice and move the figure for the number of places corresponding the number on the dice.

FIELD 75 – If you answer the question correctly, take the ladder to get to field 95, where you have to answer a new question and continue the game, depending on your answer. If you give the wrong answer on field 75, you stay on the same field and the player on your left takes the turn. When it's your turn again, you roll the dice and move the figure the number of places corresponding the number on the dice.

FIELD WITH A HOLE (13, 40, 42, 63, 73)

When you get to the field with a hole, you don't answer a question – you go back on a field as written on the board. The player on our left takes the turn.

FIELD WITH A PUDDLE (6, 18, 25, 32, 43, 62, 69, 71, 84, 85, 86)

Miss a turn! When you get to a field with a puddle, you don't answer a question and you miss a turn. When it's your turn again, you roll the dice and move the figure for the number of places corresponding the number on the dice.

FIELD WITH A RED FLAG (65)

Miss two turns! When you get to field 65, you don't answer a question and you miss two turns.

FIELD WITH A SCULL (51)

On this field, you have to answer three questions. You can continue the game only if you gave all three correct answers. If you don't answer all the questions correctly, the player on your left takes a turn. When it's your turn again, you answer three new questions and continue the game in case of answering all questions correctly.

FIELD WITH FISH (55)

On this field, you have to answer five questions correctly. You continue the game only if you answered all of them correctly. If you don't answer all the questions correctly, the player on your left takes a turn. When it's your turn again, you get to answer another five questions and continue the game in case of answering them correctly.

FIELD WITH TREASURE (37)

When you get to the field with treasure, you have a chance to roll the dice again, without having to answer a question from the card,

WINNER

The winner is the one who first comes to the treasure box, answering the last question correctly.

Good luck!


START
VRATI SE NA POLJE 43
VRATI SE NA POLJE 18

QUESTIONS FOR AGES 6-10

Which animal is protected in Međimurje?

a) the cow
b) the Međimurje horse
c) the peacock

Which republics does Međimurje border with?

Slovenia and Hungary.

How many species of fish have been recorded in the Mura River?

a) 38
b) 40
c) 58

In which country is the source of the river of Drava?

In Italy.

How many hydropower plants are there in Međimurje?

a) 3
b) 2
c) 1

Which two rivers surround Međimurje County?

The Mura River, the Drava River.

Which streams flow through Međimurje?

a) Trnava, Bistrec
b) Mura and Drava
c) Kupa and Una

Who was Čakovec named after?

a) Nikola Zrinski
b) Dimitrij Čak
c) Petar Zrinski

QUESTIONS FOR AGES 6-10

What is the Church of St. Jerome in Štrigova famous for?

a) graffiti

b) Ranger's frescos

c) the smallest Bible

What is Peklenica known for?

a) oil and sources of natural gas

b) heaven and hell

c) forests and gold

Name the most famous textile companies in Međimurje!

a) Čateks, MTČ

b) C&A, H&M

c) Vajda, Jelen

Which side of the world is Međimurje located in Croatia?

In the north.

Which is the biggest summer festival in Čakovec?

Porcijunkulovo.

Which is the most northern location in the Republic of Croatia?

Sveti Martin na Muri (Žabnik).

Which spa is the most famous in Međimurje?

LifeClass Terme Sveti Martin .

Which family is the most famous historic family in Međimurje?

The Zrinski family.

QUESTIONS FOR AGES 6-10

Nearby which town does the Mura flow into the Drava?

Legrad.

Which river is a hydroelectric power plant built on in Međimurje County?

The Drava River.

Međimurje is in the shape of:

a) a triangle
b) a circle
c) a rectangle

In this year , on 29th May, Čakovec was proclaimed a free market town and this day has been celebrated as The Day of the Town.

a) 1579
b) 1679
c) 1589

The first railway in Međimurje was built in 1860, but also in Croatia. In 2020 it will celebrate its:

a) 120th anniversary;
b) 140th anniversary
c) 160th anniversary

In 1893, eletric lighting was introduced in Čakovec. In which century did Čakovec get electric lighting?

In the 19th century.

Which river does the Mura flow in?

a) the Sava
b) the Drava
c) the Bednja

60 animals live in the Mura River, out of which...

a) 15 are very endangered
b) 30 are very endangered
c) 55 are very endangered

QUESTIONS FOR AGES 6-10

Which date is the day of Međimurje County celebrated?

29th April.

Which town is the capital of Međimurje County?

Čakovec.

Who was Čakovec named after?

a) Nikola Zrinski
b) Dimitrij Čak
c) Petar Zrinski

How many artificial lakes were built on the Drava River?

Two.

How many bell towers has the Church of St. Jerome in Štrigova?

Two.

What is the name of a famous composer born in 19 th century in Čakovec?

Josip Štolcer Slavenski.

Nikola VII. Zrinski died while hunting in 1664 in Kuršanec Grove. In which century did he die?

In the 17th century.

Across the Mura, people, tractors and cars are carried by...

a) a ship
b) a speedboat
c) a ferry

QUESTIONS FOR AGES 6-10

In which school in Čakovec you can learn about film animation?

ŠAF (Škola animiranog filma.)

Which are the border crossings in Međimurje?

a) Goričan, Štrigova, Prelog, Šenkovec
b) Mursko Središće, Pribislavec, Prekopa, Brezje
c) Goričan, Kotoriba, Trnovec, Mursko Središće

The Međimurje horse has a mass of about 800 kilograms or:

a) 800,000 grams
b) 80,000 grams
c) 8,000 grams

What is the highest peak in Međimurje?

The Cimerman hill.

Count Nikola Zrinski was the Croatian Ban from 1647 to 1664. How many years was he the Ban?

17 years.

How many towns are there in Međimurje County? Name the towns.

3, Čakovec, Mursko Središće and Prelog.

Which date is the day of Međimurje County celebrated?

30th April.

In which country is the source of the Mura River?

a) In Hungary
b) in Austria (Hohe Tauern)
c) in Slovenia

The board game at Croatian school was created by Art group, led by their Art teacher. As shown in the pictures above, it has been played on many occasions, e.g. with parents on Erasmus+ Day, in the school library during breaks, as well as within regular classes. The students enjoy it very much.

QUESTIONS FOR AGES 11-15

The perimeter of the planetree's trunk - the tree monument in Nedelišće - is 3.5 of an average Croatian adult's height (180 cm):

a) 550 cm
b) 610 cm
c) 630 cm

In 2019 Čakovec will celebrate the 400th anniversary of its proclamation of a township. It was proclaimed in:

d) 1579
e) 1679
f) 1589

The town of Čakovec has a total area of 73 km^2 whereas Međimurje (estimated):

a) 10 times more
b) 15 times more
c) 20 times more

30,000 people live in towns of Međimurje out of 115,000 inhabitants in total, accordingly about each:

a) third
b) fourth
c) fifth

If the planetree in Nedelišće casts a shadow of 3.5 m while at the same time a boy with a height of 1 m casts a shadow of 10 cm, accordingly the planetree's height is:

a) 35 cm
b) 350 cm
c) 35 m

The Cimerman's hill (not the Mohokos) is the highest point in Međimurje and it is a third of the height of Medvednica (1,035 m):

a) 333 m
b) 341 m
c) **345 m**

The Drava in Međimurje is 60 km long out of a total of 700 km, which is about equal to the percentage of its total length:

a) 5%
b) **9%**
c) 15%

115,000 people live in 730 km^2 of Međimurje. The density of its population is:

a) 106 inhabitants/ km^2
b) 260 inhabitants/ km^2
c) **160 inhabitants/ km^2**

QUESTIONS FOR AGES 11-15

Međimurje is known for the recycling of garbage. If we recycle 60% out of 120 litres, how much litres of garbage have we recycled?

a) 60 litres
b) 72 litres
c) 80 litres

Čakovec is 600 km away from Rome. If you drive at a speed of 100 kilometres per hour, you will arrive in Rome in:

a) 10 hours
b) 6 hours
c) 12 hours

Čakovec is 250 km away from Vienna. If you drive at a speed of 125 kilometres per hour, you will arrive in Vienna in:

a) 5 hours
b) 2 hours
c) 1 hour

In Međimurje there are

$50 - 28 : 2 + 12 \cdot 3 - 50 = x$

municipalities:

a) x = 22
b) x = 21
c) x = 23

The length of the distance Čakovec - Kotoriba is one fifth of 180 km:

a) 36 km
b) 32 km
c) 28 km

The off-road biking path Murska is 80 km long and it takes 4 hours from start to finish. What is the biker's average speed?

a) 20 km/h
b) 40 km/h
c) 80 km/h

Čakovec is 700 km away from Dubrovnik. If you drive at a speed of 50 kilometres per hour, you will arrive in Dubrovnik in:

a) 7 hours
b) 50 hours
c) 14 hours

There are 115,000 inhabitants out of which 19,000 children in Međimurje. Every _____ resident of Međimurje is a child.

a) third
b) sixth
c) ninth

QUESTIONS FOR AGES 11-15

Prelog, Čakovec and Mursko Središće are towns in Međimurje. If you sum up all the letters of these towns, the highest divisor of the obtained sum is:

a) 3
b) 5
c) 9

Čakovec is 100 kilometres away from Zagreb, which is a quarter of the distance from Zagreb to Belgrade. How far is Zagreb away from Belgrade?

a) 100 km
b) 440 km
c) 400 km

In Croatia, 24th August is celebrated as the Day of Storks. From the total number of 35 observed nests in 2017 in the area of Međimurje County, 18 are active. How much is that in percentage?

a) approximately 50%
b) approximately 35%
c) approximately 18%

The educational path Murščak is 6,300 m long. How much is that in centimetres?

a) 630,000 cm
b) 63,000 cm
c) 6,300,000 cm

Count Nikola Zrinski was the Croatian Ban from 1647 to 1664. How many years was he the Ban?

17 years.

Ban Nikola Zrinski died while hunting a boar on 18th November 1664 in Kuršanec Grove. He was born in 1620, how old was he when he died?

He was **44 years** old.

The first written document about Međimurje dates back to 1203, when King Emeric resolved tax issues of the residents of Mihovljan. In which century was this document created?

In the 13th century.

Nikola VII. Zrinski died while hunting in 1664 in Kuršanec Grove. In which century did he die?

In the 17th century.

QUESTIONS FOR AGES 11-15

The main organizer of Međimurje's liberation from the Hungarian occupational authorities after the First World War was:

a) Dr. Ivan Novak

b) Dr. Vinko Žganec

c) Dr. Zvonimir Bartolić

In the plague epidemic that lasted from 1553 to 1555, about 12,000 people died. How many years did the plague last, and how many people died on average every year during the plague?

Two years, 6,000 people died.

On 29th May 1578, Juraj IV. Zrinski issued a Charter establishing the privileges to the residents of the fortress in Čakovec. How do we celebrate this date nowadays?

The Day of the town of Čakovec.

Since when is the Mura River landscape in Međimurje protected as significant by Međimurje County?

a) since 17th May 1999

b) since 1st June 2002

C) since 18th April 2001

How long is the Mura River?

a) 493 km

b) 513 km

c) 489 km

Which river does the Mura flow in?

d) the Sava

e) the Drava

f) the Bednja

On which date has the highest level of the Mura River been recorded?

a) 3rd July 1998

b) 29th August 2004

c) 23rd August 2005

What is the elevation of the Mura River?

a) 1,898 m

b) 1,282 m

c) 1,736 m

QUESTIONS FOR AGES 11-15

Across the Mura, people, tractors and cars are carried by...

d) a ship
e) a speedboat
f) a ferry

How many species of fish have been recorded in the Mura River?

d) 38
e) 40
f) 58

Which animal is protected in Međimurje?

d) the cow
e) the Međimurje horse
f) the peacock

In which century Čakovec got electricity?

a) 18 th century
b) 20 th century
c) 19 th century

What building was built in 1702, as the first bricked house in Čakovec?

The monastery in Čakovec.

In which century were Zrinski and Frankopan beheaded?

In the 17th century.

Čakovec is 250 km away from Vienna. If you drive at a speed of 125 kilometres per hour, you will arrive in Vienna in:

a) 5 hours
b) 2 hours
c) 1 hour

One of the first colleges in Croatia is the Faculty of Teacher Education in Čakovec that will celebrate 140 years in 2019. When was it founded?

a) In 1889
b) In 1879
c) In 1899

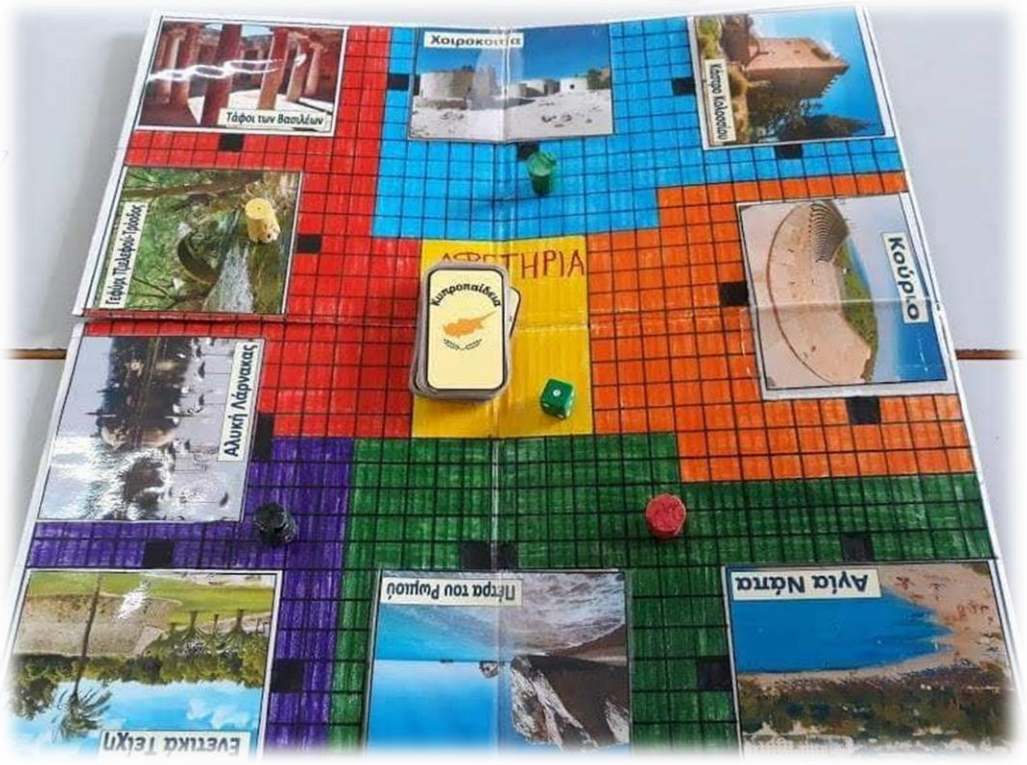
9th Primary School Limassol


INNOVATE TOGETHER

Cypropaedia Board Game

INSTRUCTIONS

1. Each player takes a card and a token.
2. We put the token at the start in the centre of the game board. All yellow (multipli cation) cards are also put there.
3. All players roll a dice. The one with the biggest number starts first.
4. We roll a dice and move the number of spaces shown on the dice.
5. Each of us can move horizontally or vertically, forward or backwards (not crosswise).
6. We can change direction as many times as we like. We cannot visit the same square twice during the same round.
7. We cannot stop in the same square if someone else is there.
8. The main purpose of the game is to visit all the places of Cyprus and collect all the picture featuring Cyprus traditional dishes.
9. Each me you visit a place, you take a yellow card. If you answer correctly, you take a food card and you put it on the Cyprus Traditional Dishes card.
10. If you don't answer correctly, wait until the next round to draw another.
11. We can check our answers on the multiplication square chart.
12. The winner is the player who completes the Cyprus Traditional dishes card.



Board games played in Cyprus, by Cypriot students and parents during Numeracy Week and during Innovate Together LTTA, by students from all countries, in March 2019.

Math Twister Game

Materials:

1. A mat full of different shapes in various colours
2. 2 spinners

How to play:

1. Spread the mat face up on a flat surface.
2. Players take off their shoes and set them aside.
3. An extra person is a referee. The referee is not considered a player during the game.
4. The referee spins the wheels and calls out hand or foot, shape and the colour that the spinners point to.
5. Each player attempts to place that part onto an open space for that colour. If there are no open spaces, then the referee must spin again.
6. If the foot or hand is already on the colour requested, then the player must move it to a different open spot of that same colour.
7. If two or more players go for the same spot, then the referee must declare who had reached that spot first and the other player will have to find an open shape of that same colour.
8. Players never remove their hand or foot from a shape unless they are directed to by the referee after a spin. They must temporarily lift a hand or foot to allow another part to pass through, but the must tell the referee before doing so. 9. Any player who falls, or touches the mat with an elbow or knee, is immediately out of the game.

Winning the Game:
The last player left in the game is the winner!

Maths Twister Game, played in Cyprus during Numeracy Week.

Szkoła Podstawowa nr 19
Legnica

Puss in Boots Board Game

A board game for 2-4 players aged 8 years and upwards

Contents of the Game: 1 game board, 4 counters, 1 dice, game instruction

The main goal of this game is to participate in the adventures of Puss in Boots and to be the first to get to the Castle (field 80). Players move their counters on the board; some fields delay or speed up the Puss in its march to the castle.

Before the game:

All players select counters. The youngest participant starts the game. Other players toss the dice in the clockwise direction, to establish the playing order ("six" means that you are next). At the beginning of the game, all the counters are placed on field 1. A "six" during the game means rolling the dice again.

Special spaces on the board:

1. Game start

8. You have caught a rabbit- calculate the perimeter of the square-shaped base of the cage, where the Puss in Boots keeps the rabbit's snack. Try the formula:

P=4cm+4cm+4cm+4cm. (P=4x4cm). If you are correct (P=16cm) you toss the dice again.

If your answer is wrong- you lose your turn.

14. The King has warmly welcomed you. He accepted your gift. You wait one turn because he invited you for a feast.

15. You hunted three times. Each time you caught 3 partridges. How many birds did the Puss in Boots take to the King? If you are correct, move your counter 9 fields forward. (The answer is 3x3=9). If you are wrong, move your counter 9 fields backwards.

20. You left your hat when visiting the King. Go back to start, field 1.

Puss in Boots encourages the Miller to swim in the river. The swim takes a quarter. If you know how many minutes a quarter lasts, move your counter to the field 30. If you are wrong, move 2 fields back.

33. Everything is according to the plan. Go 5 fields forward.

34. The Miller, the King and the Princess are heading into the Ogre's Castle. It takes three quarters. How many minutes is it? If you are correct, go to field 38. (The answer is 45 minutes). If you are wrong, you lose one turn.

46. You reached the Ogre's Castle; however, you were talking with him for a while. You have to wait for one turn.

56. The Ogre turns into a lion. You are so scared that you move 8 fields back.

60. The Ogre turns into a mouse. Puss in Boots eats the mouse. You have an extra toss.

80. Puss in Boots waits for the Miller and the King in the castle. Move into the Ogre's castle and finish the game.

You are allowed to move your counter on the field 80 when you throw the exact number of the fields you are away from the finish. You are the winner when you are the first on the field 80. Other players continue playing for places 2-4.

Puss in Boots Board Game

Mathematics Version

Rules for this game are similar to the rules for "I Love Međimurje" Game. It can be played with any blank template and printable cards below.

RULES

THE AIM OF THE GAME

In this game, the aim is to reach the final number (end) before other players. It is necessary to answer a question on each field correctly.

GAME PREPARATION

1 Each player chooses one figure to play with.
2 Place cards with questions and answers next to the board, with the side with text face down.
3 Roll the dice to decide who starts the game. The player with the highest score starts the game.

The game starts on the field START.

IT'S YOUR TURN

1 Roll the dice!
2 Move! The number on the dice determines the number of places the player moves its figure.
3 When you stop on a field, answer the question or will be asked. One of the other players has to take the first card from the top of the cards and read the question aloud.

CORRECT ANSWER

If you answer the question correctly, you roll the dice again and answer a new question. As long as you keep answering the questions correctly, you can roll the dice and move on and on.

WRONG ANSWER

We are sorry! You stop playing until it's your turn again. The player on your left rolls the dice and plays.

Puss in Boots Board Game template

Game cards to print out

How many eggs do you have if you have threescore eggs? 60	Which figure is greater: 0.2 or 0.02? 0.2
There are twelve one-pound coins in a dozen. How many fifty-pence coins are in a dozen? 12	Is it possible that in an obtuse triangle one of its angles is a right angle? No.
Two hands have 10 fingers. How many fingers are at 10 hands? 50	Is a cube also a prism? Yes.
What is the formula to find a rectangle area? a×b	Which mathematical operation is represented by a fraction bar? Division.

What is the formula to find a circle area? πr^2	If we switch places of a numerator and a denominator in a proper fraction, the new fraction is a higher or a lower figure? A higher figure.
Is a rational number a real number? Yes.	What figure has no reciprocal? 0
Is it true that each integer is a natural number? No.	What is the sum of the angles in one tetragon? 360^o
How many millimetres are in 17cm 4mm? 174 mm	How many seconds are there in one hour? 3600

How do we call the longest chord in a circle? Diameter.	Is a rectangle a parallelogram? Yes.
Two supplementary angles sum to… straight angle (180º).	What is the sum of the angles in one triangle? 180º
How do we call an angle which is less than 90º? Acute angle.	Is a rhombus a trapezium? Yes.
Is the object presented in a scale 1:50 reduced or enlarged? Reduced.	What is a formula to find a trapezium area? $\frac{(a+b)\times h}{2}$

Can we calculate a rhombus area if we only know the length of its diagonals? Yes.	A number is represented by letter “m”. How do we write this number if we want to add 3 to it? m+3
How do we write a subtraction of number “a” cubed and number “b” cubed? a^3-b^3	Is a cone a pyramid? No.
Is “a whole” the same as 200%? No.	How many quarters are in the coordinate system? 4
What is 15% of 300? 45	What is the opposite number to 10? -10

What is the absolute number of -5? 5	What is 150% of 500? 750
Is it possible to draw a triangle with the length of the sides 2cm, 5cm, 7 cm? No.	Are the rhombus diagonals perpendicular? Yes
What number stands in the numerator of a unit fraction? 1	The total weight of a product and its packaging is called… gross weight.
How do we call a weight of an empty packaging or a container? Tare weight.	How do we call a number which satisfies an equation? The solution of an equation/root of an equation.

Is the AB ray the same as the BA ray? No.	How do we call a sum of a collection of numbers divided by the number of numbers in the collection? Arithmetic mean.
Can a regular polygon have its sides in different lengths? No.	Compute x in the equation 5x=10. x=2
Which branch of mathematics is concerned with shape, size and relative position of figures? Geometry.	Does a pyramid with 100 edges exist? Yes.

Agrupamento de Escolas de Loureiro

The *Moliceiro* Game

The *Molicieiro* Game is a table game that is played with two or more players. Each player advances his token in a spiral-shaped tray with 63 houses. The houses are numbered from 1 to 63 and there is a drawing on each.
Depending on the square on which you fall, you can advance or reverse, and there are houses that you can receive a punishment. In turns, each player throws two dice that indicate the number of houses that have to advance.

The *Moliceiro boat*
In the boxes 5, 9, 14, 18, 23, 27, 32, 36, 41, 45, 50, 54, and 58, the *Moliceiro boat* is drawn. When you fall into one of these houses, you can advance to the next
House with a *Moliceiro Boat* and play.

The bridge of *Minhoteira*
In house 6 there is a bridge: when falling in this house you should go back to house 1.

The City Hall - *Pinheiro da Bemposta*
In house 19 is a photograph of the Municipality and falling on this house, you won't play one time.

The dice
In the houses 26 and 53 are the dice: if you fall into one of these two houses, you should play again.

The grandmother's well - Pinheiro da Bemposta
The photograph of the well is on the house 31; by falling on this house you can not play again until another player passes through that house.

The pedestrian route – Kings Way
On the house 42, there is a photograph of a pedestrian route: when you reach this house you are forced to go back to house 30.

The train station - Pinheiro da Bemposta
The railway station is in house 52; falling in this box means two turns without playing.

The Pillory - Pinheiro da Bemposta
The house 59 is the "house of Pillory- a dead-end ": when falling in this house you will have to return to the house 1.

The first player arriving at the house 63 wins the game – it is called "The *Moliceiro* Pier"

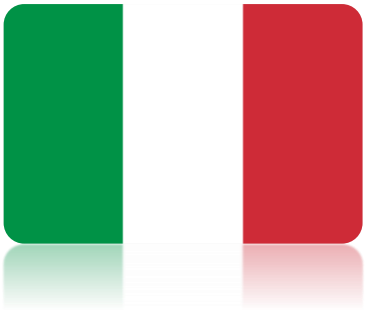
The Moliceiro Board Game templates

St Michael's RC Voluntary Aided Primary School Houghton-le-Spring

Sunderland Monopoly

Our KS2 children used the Sunderland version of Monopoly and created their own chance and community chest cards.
Children had to use their Maths skills to pay for each location and to pay any fines.
Examples of chance cards:
To move forward 5 places, can you work out how much it would cost to buy, Washington Old Hall, The Stadium of Light and Dame Dorothy Street.
The game was very well received and the children had great fun!

Istituto Comprensivo Faenza San Rocco

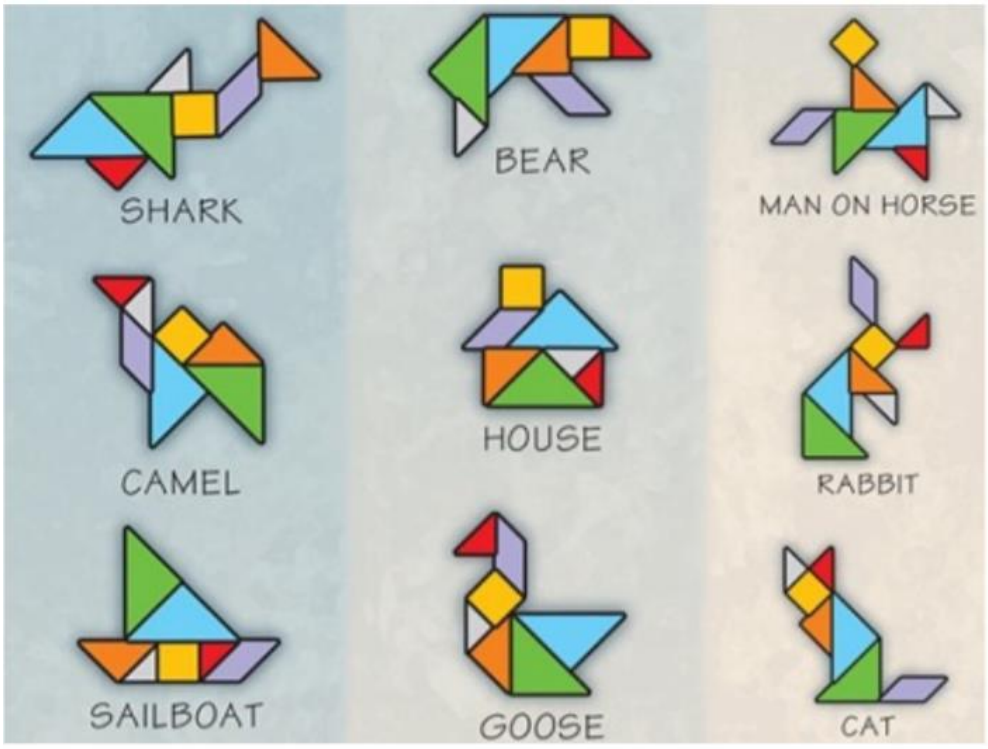


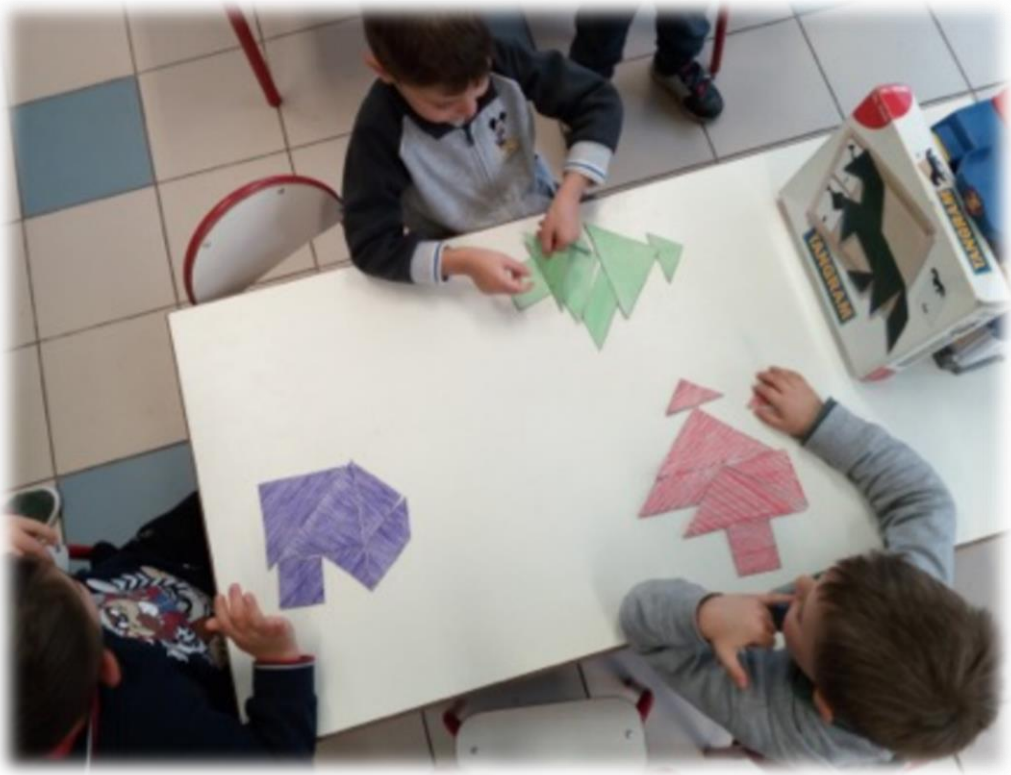
Tangram

Tangram is a mathematical game of Chinese origin.

Instruments:
7 tablets of different shapes that initially form a square:
1 parallelogram
2 large triangles
1 middle triangle
2 small triangles
1 square

Rules You have to use all seven pieces without overlapping them. Purpose Form the completed figure figures or dial figures as indicated in the instruction booklet





Children in Italy creating tangram shapes.

Game cards to print out

(to be used with any blank template, and played by the rules available on page 49)

The approximate population of Italy (2019), makes 1/3 of 180 million, which is: a) 50 million b) **60 million** c) 70 million	The approximate population of Rome (2019), makes ½ of 5,8 million, which is: a) 1,9 million b) 2,4 million c) **2,9 million**
1 Euro equals: a) 10 cents b) **100 cents** c) 1000 cents	Italy shares the land border with six countries: a) **France, Austria, Switzerland, Slovenia, Vatican City and San Marino** b) Germany, Austria, Switzerland, Slovenia, Vatican City and San Marino c) France, Austria, Switzerland, Romania, Vatican City and San Marino
If you divide 27/9, you get the number of active volcanoes in Italy: a) 2 b) **3** c) 4	Pizza, the most famous Italian dish, was invented in Naples in 1800s, which is: a) 17th century b) 18th century c) **19th century**
Some of the peaks in the Italian Dolomites are higher than 1/5 of 15000 m, which is: a) 1000 m b) **3000 m** c) 7000 m	The first modern Palio di Siena, a famous horse race, took place in 1633. This was in: a) 15th century b) 16th century c) **17th century**

Rome became the capital of Italy in 1870. This was in: a) 13th century b) **19th century** c) 20th century	The oldest university in the world was founded in 1088 in Bologna, which is: a) 10th century b) **11th century** c) 12th century
The Florence-Faenza marathon, held every year in May, is 1/3 of 300 km long, which is: a) 30 km b) 60 c) **100 km**	Faenza is home to the famous International Museum of Ceramics, founded in: a) **1908** b) 1928 c) 1998
From 1 November 2019 to 13 April 2020 Faenza famous International Museum of Ceramics is hosting an exhibition of works of art by: a) **Picasso** b) Boticelli c) Michelangelo	The approximate distance between Bologna and Faenza is 1/3 of 180 km. That is: a) 40 km b) **60 km** c) 120 km
The approximate population of Faenza (2019) is: a) 5000 b) 50000 c) **60000**	The approximate distance between Rome and Faenza is 1/2 of 750 km. That is: a) 300 km b) 350 km c) **375 km**

Is number 47 prime? **Yes**.	Is number 20 prime? **No**.
Is number 44 prime? **No**.	Is number 5 prime? **Yes**.
Is number 68 prime? **No**.	Is number 6 prime? **No**.
Is number 83 prime? **Yes**.	Is number 27 prime? **No**.

True or false? 14/2=6 **False**.	True or false? 20/2=10 **True**.
True or false? 49/7=7 **True**.	True or false? 56/7=9 **False**.
58x6= **348**	111x7= **777**
270/9= **30**	473-436= **37**

Şcoala Gimnazială Nr. 1 Independenţa

Game cards to print out

(to be used with any blank template, and played by the rules available on page 49)

The approximate population of Romania (2019), makes 25% of 80 million, which is: a) 15 million b) **20 million** c) 25 million	The approximate population of Bucharest (2019), makes 50% of 3,6 million, which is: **1,8 million**
1 Leu equals: a) 10 bani b) 100 cents c) **100 bani**	Romania shares the land border with: a) Bulgaria, Hungary, Moldova, Croatia and Ukraine b) Albania, Hungary, Moldova, Serbia and Ukraine c) **Bulgaria, Hungary, Moldova, Serbia and Ukraine**
If you divide 5088/2, you get the height of the highest peak in Romania, Moldoveanu Peak: a) 2044 b) **2544** c) 2088	Bran Castle (known as Dracula's castle), was first mentioned in 1377, which is: a) 13th century b) **14th century** c) 15th century
The Carpathian Mountains in Romania, approximately 1500 km long, represent in Europe: a) the longest mountain range b) the 2nd longest mountain range c) **the 3rd longest mountain range**	Nadia Comaneci, a Romanian gymnast, was the first to score …. at Montreal Olympics in 1976: a) almost perfect 9.9 b) **a perfect 10** c) a superb 12

Bucharest became the capital of Romania in 1862. This was in: a) 13th century b) **19th century** c) 20th century	In the year… Romania celebrated the 100 years anniversary of the unification with all its historical provinces. a) 2017 b) **2018** c) 2019
Carol I, the King of Romania, was born in 1839 and died in 1914. How old was he when he died? **75**	The number of residents of Galați is ¼ of 1 million. How many residents are there? **250 000**
The approximate distance between Independenta and Čakovec is 1/3 of 3600 km. How many kilometres is that? **1200 km**	The approximate distance between Independenta and Bucharest is 1/4 of 1000 km. How many kilometres is that? **250 km**
The approximate distance between Independenta and Galați is 25% of 100 km. How many kilometres is that? **25 km**	The approximate distance between Independenta and Loureiro is 1/2 of 7600 km. That is: a) 3300 km b) 3500 km c) **3800 km**

$\frac{1}{4} + \frac{4}{8} + \frac{1}{8} =$ **$\frac{7}{8}$**	$\frac{1}{6} + \frac{1}{2} + \frac{1}{6} =$ **$\frac{5}{6}$**
$\frac{1}{4} + \frac{1}{4} + \frac{1}{8} =$ **$\frac{5}{8}$**	250x8= **2000**
60/4= **15**	350+550= **900**
240x3= **720**	1050x3= **3150**

True or false? 64/8=9 **False**.	True or false? 64/8=8 **True**.
True or false? 81/9=9 **True**.	True or false? 42/7=7 **False**.
42x4= **168**	555x3= **1665**
810/9= **90**	420-90= **330**

Chapter III
Innovate Together
Outdoor Games

II. osnovna škola Čakovec

Outdoor Games in Croatia

Games Between Two World Wars

Last school year at our school we hosted Mrs Marija Vuk, the author of the book "Pots - Games Between Two World Wars". She presented our (then) students of year 2 (age 8) with her work, teaching our third graders some games described in her book. Our teachers and students decided to further explore other games. Class teachers organised a competition in our schoolyard. Students of year 3 competed in pairs and groups in different disciplines: *Varjatori* - a forerunner of baseball, Bag Race, Egg and Spoon Race, Hula Hoop, Wheelbarrow Race, Border Guards and others, as described as follows. During our activities and later in class we had students use their numeracy skills in the following ways: measuring the path (how many steps, metres, turning metres into decimetres and centimetres), dividing pupils into groups, counting during warm-up exercises, calculations with scores. This activity helped us strengthen our students' mathematical, social and civic competences, sense of initiative and entrepreneurship. A film about outdoor games at our school is available here (https://www.kizoa.com/Movie-Video-Slideshow-Maker/d225312844kP711282501o1l1/outdoor-games).

Bag Race

Egg and Spoon Race

Štukuki

This is a ball game. A group of children is divided into teams A and B.

Two lines must be drawn. One player (called C), chosen by a counting-out game, moves between two lines and tries to prevent throwing the ball.

The other players move, each team behind their line. Players from each team take turns in trying to hit players from the other team. Player C, moving between two lines, tries to prevent them. Teams take turns in hitting players from the other team until all hit players are out. The team in which at least one player stays in, is the winner.

Činkanje

There can be more players.

A line must be drawn. Players throw buttons around it.

Buttons should be of different colours and sizes. All buttons are thrown on the ground.

Players take turns to choose their button and try to hit another button by knuckling it.

The player, who hits another button, can take it.

I'm on your part!

It's a game of jumping over a ditch. All players stand on one side of the ditch, and one player, the hunter, chosen by a counting-out game, stands one the other side. The players jump from their side to the hunter's side, shouting: "I'm on your part!"

As they jump, the hunter tries to catch them while on his side of the ditch. The player caught by the hunter is out. The game goes on until all the players get caught by the hunter.

Varjatori

For this game, you need a ball and a stick.

There can be two or more players. One player throws the ball in the air, and the other tries to hit it with a stick. The winner is the one with the highest score in hitting the ball with the stick.

9th Primary School Limassol


INNOVATE TOGETHER

Outdoor games in Cyprus

Outdoor play is one of the things that actually characterises childhood. So, taking learning outdoors is a great way to engage and motivate kids. The fresh air and change of scenery can be just what children need to get excited about playing with and practising math concepts. We decided to turn outdoor games into outdoor math games. The resounding claim by our students is how much they love the chance to be outside, active and learning all at the same time. It is often forgotten, in the hustle and bustle of meeting all the benchmarks, testing deadlines and chaos of the daily grind in teaching math, that it still has to be fun. Kids respond to learning when engaged, challenged and enjoying their tasks. The students of each class with their teachers designed a math outdoor game. And on the last day of the Numeracy Week, they presented their games to the students of the other classes of the school.

1st Grade:

A'1: Game with dice and Game "Eggs, eggs, I am selling eggs"

A'2: Ordering Numbers Game

2nd Grade:

B'1: Game "Math twister" (also a board game, description available on page 43)

B'2: Game "mantili/handkerchief/scarf"

3rd Grade:

C'1 & C'2: Game "Multiples of 4" and Game "Math tic-tac-toe"

C'3: Game "Music notes and fractions"

Outdoor Dice Game – A'2

Materials: dice, addition and subtraction cards
Description: The children sit in a circle and throw the dice. In the middle of the circle, cards with mathematical sentences are overturned. The kid who gets the dice is called to get a card from the floor, read it loudly and say the result. If it is a mathematical proposition of addition, then the other children call out the same mathematical proposition by invoking the transitional property – Countermeasure property of addition. (e.g. 3 + 5 = 8, 5 + 3 = 8)

Outdoor Game: I am selling eggs - A΄2

Materials: dice
Description: Children are sitting in a circle. A child runs out of the circle while holding dice and the rest of the children sing "Eggs, eggs I am selling eggs". When the song finishes, the child who runs out of the circle leaves the dice to another kid. Then, the new child is called to say a mathematical proposition with sum or difference the number indicated by the side of the dice.

Outdoor Game "*Mantili*/handkerchief/scarf" – B'2

Mandili, which is a handkerchief/scarf in Greek, is a traditional game played by six or more players.
The players are divided into two groups and stand opposite each other at a distance. The teacher stands in the centre holding the handkerchief/scarf. Each child in each group holds a number. When the teacher calls out a number, the player holding the number from each group tries to take the handkerchief/scarf from the centre without his opponent touching him. If he touches him, the point goes to the opponents' team. But if the opponent crosses his line the point is his. The winner is the team with the most points.

Variation: The teacher calls out a mathematical operation of addition, subtraction, multiplication or division, and the child holding the answer runs to take the handkerchief/scarf

Objective: speed mental calculation of math operations

Outdoor Game: Ordering Numbers – A'1

Materials:

- cards with numbers from 1 – 10 (one set for each of the five groups)
- 10 pictures presenting a story from the beginning to the end, one set for each two students

Goals: Students in groups should be able to put numbers from 1-10 in order from the smallest to the biggest or vice versa. Students in pairs should be able to put pictures in order and tell the story from the beginning to the end.

Game 1: Students come out in groups of five or six. Each one is given a card with a number from 1-10. The rest of the class is singing the song Baby Shark and the group is dancing while watching each other card. When the singing stops, students of the group should stand in order according to the card number they hold, in descending or ascending order, according to the teacher's directions. The same is repeated with the rest of the groups.

Game 2: Students come out in pairs. They are given a set of ten pictures presenting a story and cards with numbers from 1-10. The first student should put the ten pictures in order (one that took place first should be first etc.) The other student should put numbers from 1-10 under the pictures and then they should tell the story to all of us, from the beginning to the end.

Outdoor Game Music Notes and Fractions

Materials:

- 10 bowling pins
- a ball
- cards with music notes ♪, ♫
- class list
- marker

Rules:

1. The students are standing in alphabetical order, according to the class list.
2. Every child throws the ball and hits some of the pins. He/she finds out the sum. This is noted next to his/her name.
3. We continue until the end of the class list.
4. The goal is to hit pins with the highest value.

The winner is the child with a higher score.

Szkoła Podstawowa nr 19
Legnica

Outdoor Games in Poland

Students of our school are very willing to participate in various games and sports games organized both in the yard or school playground, as well as in the gym. They participate in organized sports tournaments with whole families. These meetings are very important to us, because they bring parents closer to school, integrate families, everyone actively spends their free time. We try to make children learn about the games and games of their parents and grandparents. We experience that children's sports games that have already been forgotten become very attractive and interesting for them.

This activity helped us strengthen our students' mathematical, social and civic competences, sense of initiative and entrepreneurship.

Here is one of the proposed games.

Big Game Hunting

Number of participants: more than 5

Game time limit: 1 hour

Required materials and equipment: sheets of paper (A4 or A5), marker

Where to play: yard, park, meadow, forest

How to play: write down the animals and the points equivalent on the sheets of paper, e.g.: hare- 5 pts., fox- 10 pts., wolf- 15 pts., boar- 20 pts., deer- 25 pts., bear- 50 pts.

Hide the sheets of paper around the game area, according to one rule- more valuable animals should be more difficult to find. Establish the signal to begin and finish the game (e.g. use a whistle). You need to find the animals and earn points to become the best hunter. The winner is the person with the highest score.

Big Game Hunting

Agrupamento de Escolas de Loureiro

Outdoor Games in Portugal

At Pinheiro School, to celebrate the beginning of the school year, a big "Jogo do Moliceiro" (the board game presented on pages 59/60) was drawn on the ground so all students and school staff could try to play.
It was a fun and relaxing activity.

Bocia Game

As it is usual every year, when celebrating the Open School Day, students get together to play *Bocia* – a game usually played by special needs students. Students prepare teams with the special needs students, to play against each other; two teams at a time, with 6 students in each team (reds and blues).
The aim is to throw a *bocia* red/blue ball as near as possible to the white ball. The winning team is the one that has more red/blue balls near the white (1 point per ball closer to the white).
A wonderful way to include all students in a simple game!
You only need a white (heavy sandy ball) and red and blue (bocia balls - heavy sandy balls) – keeping it simple!
RULES:
2 teams (2 groups of students – Blues and Reds)
The game can be played with groups of 3, 4 or 6 players in each team.
If the team has 3 players - each receives 4 *bocia* balls; 4 players – each has 3 balls; 6 players – each receives 2 balls.
The teacher establishes the number of rounds, usually five or six.
The winning team is the one which achieves more points.
The game needs a referee to count the points and check who plays the ball.
The field is lined in a rectangular, the length is defined by the teams; each are placed alternatively on each side (or only on one side of the field is wide enough), e.g. 3 red, 3 blue, 3 red, 3 blue, - one side; 3 red, 3 blue, 3 red, 3 blue - another side.

The game starts with the captain of each team launching their ball to the best proximity of the white ball. The team starting the game is the one who has their ball next to the white ball. Each team plays in the alternative colour order until all balls are thrown.

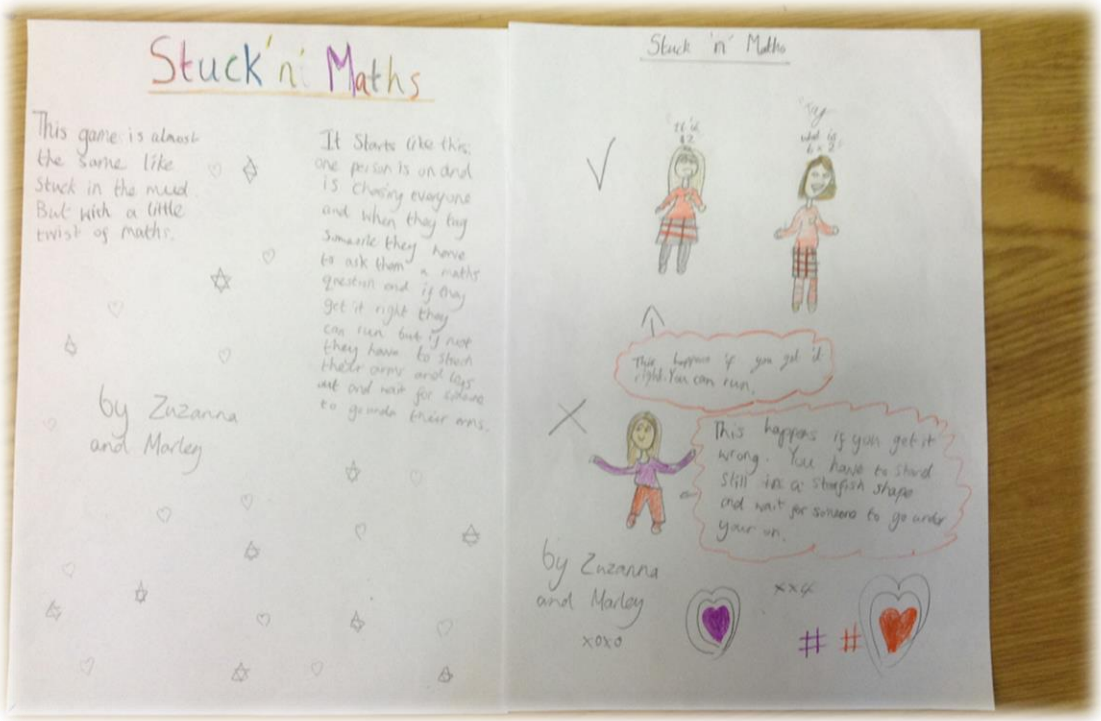
The referee and the captains of each team will check the points at the end - each ball close to the white ball gets a point.

The game repeats again until the rounds are over. In the end, all points of each team are checked and the winning team is the one with more points.

St Michael's RC Voluntary Aided Primary School Houghton-le-Spring

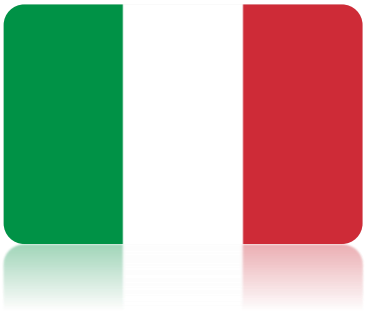
Outdoor Games in the UK

A very popular game in England is called 'Stuck in the Mud.' Our Erasmus Enrichment group each presented their own ideas for a maths game and then we voted on the best game. The winner was a maths version of 'Stuck in the Mud.' The rules are that children have to run around the yard, some children are chosen to be 'on' and tig the other children. When they tig someone, the child is stuck in the mud! To get free, they have to answer a maths question, for example, 70+30 or 6x6 or 100-93. This is a great fun game to practise mental maths skills. Many classes have now adopted this game and each class teacher pitches the questions to the appropriate level of the class, but children love it and their mental maths skills have really improved.



Stuck in the Mud Game

Istituto Comprensivo Faenza San Rocco




INNOVATE TOGETHER

Outdoor Games in Italy

Memorizing math facts is great but kids also need to understand how these facts come together. Our little math and movement game force kids to think about every step of the equation… in a really fun way. Hopscotch and maths come together easily on their own. In Italy, hopscotch takes various names according to the region: Carampana, Mondo, Settimana, Tiriticchete….

First things first, we drew our hopscotch with chalk outside.

Once we had our hopscotch ready, we started playing.

- **We started simple.** We asked children to hop on the numbers that add up to 10. Ten we continued calling out numbers while the kids bounced back and forth.
- **A little more challenging.** We suggested kids to make the same number again, in a different way. And again. And again. “How many ways can you get the answer 9?”
- **Serious thinking.** After quite a long time of hopping and thinking, we upped the challenge. This part required some serious thinking. We asked the children to make a sum of 15 using 3 numbers. And then using 4 numbers. And then 2. We changed the sum and the number to be used to get it.

Hopscotch with different tasks

Şcoala Gimnazială Nr. 1 Independenţa

Outdoor Games in Romania

One of the (present) traditional activities that took place at our school during the "A different kind of school week" is the contest - a sports carousel at which all school students attended according to their ages. The students divided into small groups (4, 5 or 6) had to go through more engaging sports training that was meant to develop driving skills like dexterity, balance, speed, coordination, teamwork. At the same time, this activity provides students with opportunities to use calculation, estimation, measurement and to collect, interpret and present data related to physical activity.

The students become able to apply mathematics in relation to health and physical activity concepts. We will present you a popular outdoor game for the smaller students.

Divide the seven-year-old children into two equal teams; give them the same number of chopsticks that they have to use them in order to build hopscotch (or other geometric shapes). Then, have them line up at the starting line. When you say "Race!" the first player in each team line has to run and hop on one leg inside of each cell of the hopscotch. If the player ends the race without touching any line, he takes for his team a number of points that the team has to count them from all its players. The first team to have all its players finish the race and with the biggest number of points, wins the game.

Sports Carousel

Outdoor Games at the LTTA Cyprus March 2019

Outdoor games, LTTA Limassol 2019

As a part of the programme of our LTTA in Cyprus, in March 2019, the host school, 9th Primary School Limassol, organized outdoor games. Students from Cyprus and guest countries competed in Egg-and-spoon race, Bag race and other traditional outdoor games. The children found the games as a very dynamic, challenging and motivating activity.

Outdoor games, LTTA Limassol 2019

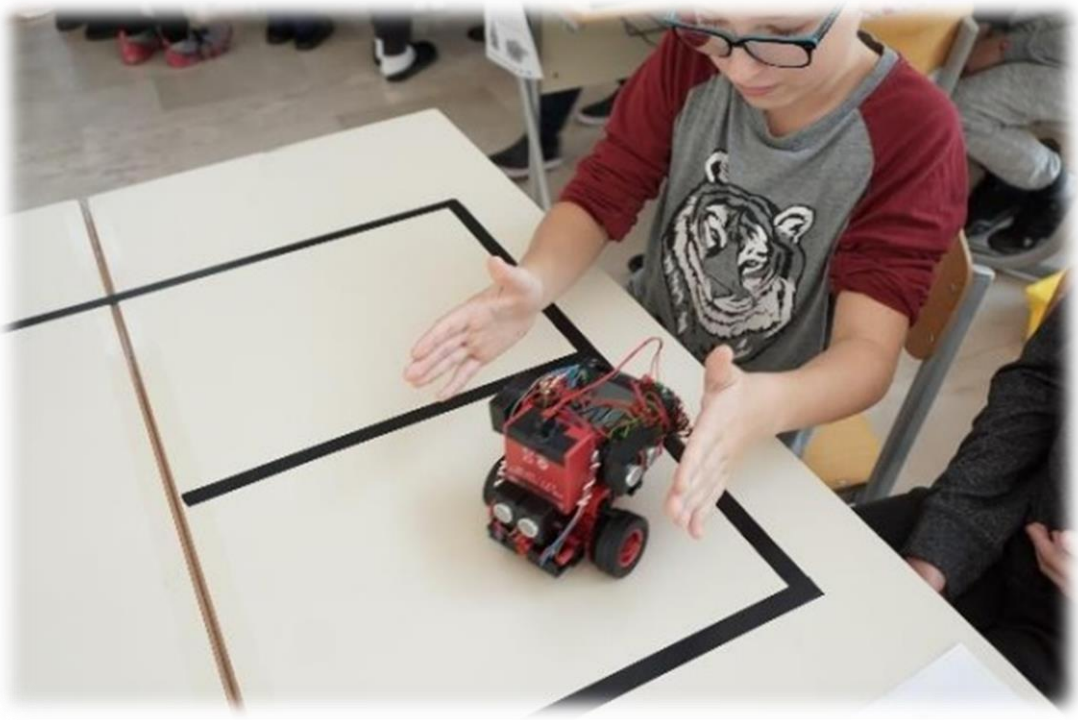
Chapter IV
Innovate Together
Coding Games

II. osnovna škola Čakovec

How to operate a robotic cart

Code Week in Croatia was marked in classes 5-8, with all students taking part in two activities, guided by technology teacher Gordan Bartolić and members of School Robotic Group: Race against the robot and operating a robot using distance sensors. The aim of the first activity was to compare two ways in which a robotic cart solves the same task: manually operated by a remote control (by a man) and automatically operated (the robot moves autonomously, helped by sensors and a corresponding program), to draw conclusions about the advantages and disadvantages of each means of control. The analysis of the experiment, observations and conclusions included questions: How precise was the drive of the robotic cart using light sensors? How long did the drive using light sensors last? Compare the accuracy of the automatic drive of the robotic cart (using light sensors) and manually operated drive. Which was (or seemed) more precise? The aim of the second activity was to use an experiment to do a research on possibilities of automatic movement of the robotic cart operated by embedded ultrasonic distance sensors, to draw conclusions on advantages and disadvantages of this kind of cart operation compared to automatic operation using light sensors from the first experiment and possibilities of application of such robotic carts (with distance sensors) in everyday life. Activity outcomes were understanding of purpose and application of programming in robotics, improved comprehension of the importance and methods how different robotic sensors function, improved ability of logical and algorithmic thinking, as well as increased interest in robotics, with a special emphasis on programming robotic carts.

Operating a robotic cart by a remote control



Operating a robotic cart by sensors

9th Primary School Limassol

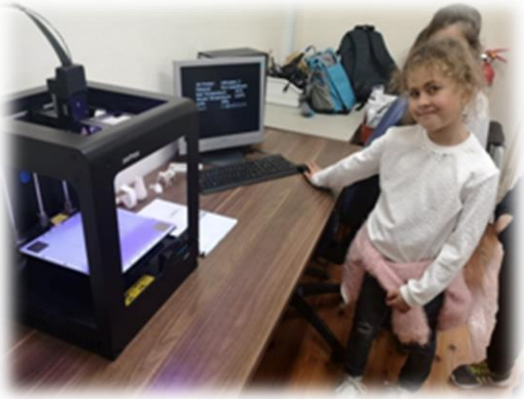
Exploring the Solar System

In November was organized in our school code week (5 to 9 of November). The 3rd grade (C'1 Class) with their teacher Zoi Kaouri took over the event. The general theme in which the week was devoted was the Solar System. In all activities the parents of the children took part.

During this week, the children worked with various robotics packages and robots like Lego We Do I, Bee-Bots, Blue Robot Dash & Dot and Botley robot.

Specifically, they constructed copies of the rover exploration vehicle that was sent to Mars with the robotic package Lego We Do II and programmed their vehicles to move on a huge map of the terrain that depicted the solar system as instructed by the teacher. Riddles and puzzles problems were solved, and based on their answer, Botley and Bee-Bots robots programmed to move on labyrinths and special ground maps. The kids used the application "Titan of Space" and "Google Expeditions" to travel to the solar system by using Virtual Reality Headsets. Also, they used the applications "Space 4D+" and "Quiver" and the live book "Solar System 3D" to build a more complete mental picture of the solar system using augmented reality.

Furthermore, they learned about 3D printing, laser cutter, drones and virtual and augmented reality by visiting the Youth Maker Space at Larnaca town. In this place, the kids had the opportunity to access and used technology equipment such as 3D printers and scanners, electronics such as Arduino, Raspberry pi, sensors etc., Drones, Virtual Reality (VR) equipment, Robots, and more "traditional" tools like hammers, pliers, screwdrivers, workbenches etc.



Szkoła Podstawowa nr 19
Legnica

Coding Masters

In Poland, a unique educational project Coding Masters was created, which aims to disseminate learning programming at Polish schools. It is introduced at the primary education level. It confirms that teaching is always worthwhile and necessary because it is not only a very useful skill in the labour market but also generally the ability to code forces to think.

As part of the classes, children learn to programme in the intuitive language of Scratch.

It is one of the most widespread and used applications for teaching coding for children. It is a simple application (and even a programming language) for visual coding, in other words, in which the algorithm is composed of coloured blocks. You can create simple games and animations with it. Scratch language allows you to write applications that allow you to control Lego Mindstorms robots and devices from Arduino, which means that in this language you can not only write a computer program but also program a robot. Thanks to such activities, young adepts of programming art can independently revive works made of blocks, construct moving vehicles, or program invented characters.

Children also use other applications. PixBlocks application allows teaching the basics of programming for people of all ages. It allows both self-study and teaching in schools under the guidance of a teacher (in accordance with the core curriculum and MEN guidelines). Thanks to it, we can learn both visual programming (which is very useful especially in the first stages of learning, in order to understand what programming is all about), and how to program text in simple Python.

Coding lessons influence the interest in IT, robotics and programming. Issues related to this subject have become familiar with children and more understandable. Students develop the desired skills: logical thinking, planning, sorting, presenting their own thoughts.

The implementation of the program has mobilized teachers to cooperate, to learn and change their working methods. Computer classes have become more attractive to students.

We are aware that apart from the mother tongue and several foreign languages, the programming language is also becoming increasingly important in our lives.

Coding is used not only by IT specialists but also by students, high school students, junior high school students and even children in primary school. By 2020, 900,000 people in IT positions may be missing in Europe. The dissemination of programming skills and knowledge of basic codes, soon during job interviews, may become as required as the knowledge of English. Hence our conviction about the necessity of coding activities.

Agrupamento de Escolas de Loureiro

Let's CODE/Programme!

To celebrate Code Week, our cluster of schools participated in an activity that was developed by our ICT and robotics teachers: during the week, all students were able to participate in the activity Let's CODE/Programme! Everyone had the opportunity in classes of ICT and Robotic as well as during break time to try coding, and other programs like Scratch and Minecraft. Students had the opportunity to engage themselves in a national contest also. This activity was promoted among all schools by the Ministry of Education.


INNOVATE TOGETHER

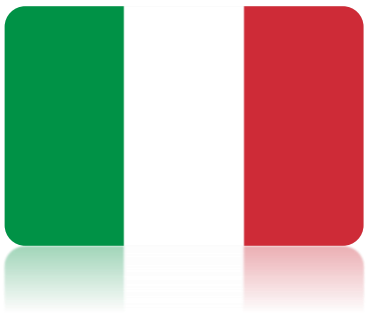
St Michael's RC Voluntary Aided Primary School Houghton-le-Spring

Learning with Bee-Bots

Our youngest children used the Bee-Bots to develop their coding skills. They were able to access the app on our iPads and physically use our Bee-Bots. In the beginning, the children had quite basic skills, but by the end were able to program routes for the bee and recognise where mistakes had been made and correct them. Our older children took part in a coding workshop run by Barclays and had great fun, learning a lot in the process. Coding is a key skill that children need to learn and is an area we are looking to develop. The robotic activities that we completed in Cyprus were fed back to our teachers and students and this is an area we are looking to work on in partnership with our local secondary school next year.

Learning with Bee-Bots

Istituto Comprensivo Faenza San Rocco




INNOVATE TOGETHER

La scuola digitale

Our school took part in a national event organized by the Ministry of Education. It is an itinerant event, starting from Genua and reaching various Italian cities, among them Ravenna, which is close to Faenza. A group of pupils from the nursery, primary and secondary school attended the workshops in Ravenna and also were part of the event itself, by presenting to the audience the activities in our school. Children had the opportunity to play using robots, electronics, tablets, QR codes and many other tools (https://youtu.be/RJDdoEsAQi4).

Şcoala Gimnazială Nr. 1 Independenţa

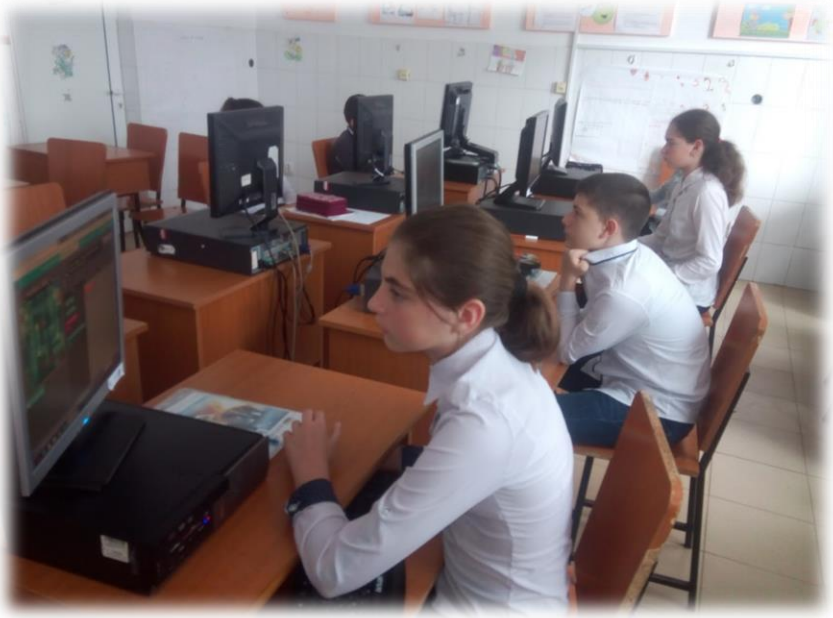

INNOVATE TOGETHER

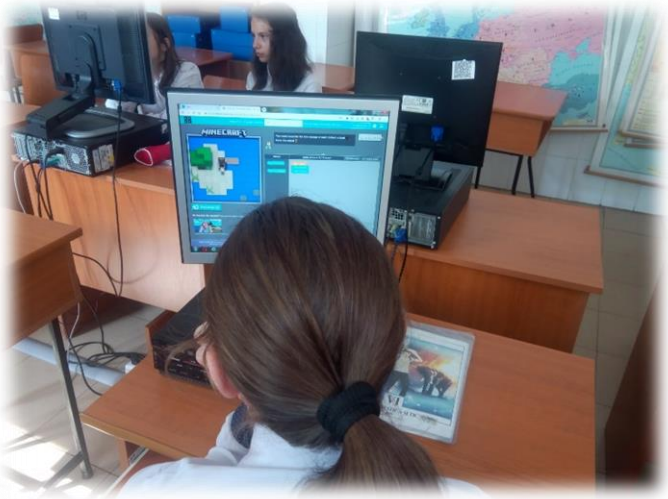
Coding Games

This activity has the role of teaching our students about programming and ICT competences.

The students of classes 3-6 participated in this activity. They had to access, during the ICT class, the site www.hourofcode.com and to choose a certain game that had to be finished by the end of the class. After the game was finished, the students received a personalized diploma. The games chosen by students were: Minecraft, Lightbot, Box Island, Code Combat and Angry Birds.

The students participated in some other activities during the Coding week which took place in November.






CERTIFICATE OF COMPLETION
Moman Sabrina
for successful completion of
HOUR OF CODE
MINECRAFT
Microsoft

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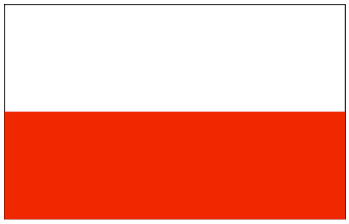

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