## Erasmus+



EFFECTIVE COMMUNICATION A SUCCESSFUL FUTURE LIFE $2015 / 2018$
'Effective Communication - A Successful Future Life'

No: 2015-1-BG01-KA219-014230

# Good Pedagogical Practices for Better Communication in Class 

## Handbook


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## INTRODUCTION

The Training Aids "Good Pedagogical Practices" is edited as an intellectual product and comprises some of the best pedagogical practices observed during the three-year period of work on the multilateral project 'Effective Communication - A Successful Future Life', European Programme Erasmus+, KA-2 № 2015-1-BG01-KA219-014230 Cooperation for Innovation and the Exchange of Good Practices, Strategic Partnerships for Schools Only.

The valuable teaching approaches and interactive educational methods have been applied in school life by the teachers from the partners' countries: Poland, Czech Republic, Slovakia, Slovenia, Portugal and Bulgaria, as a coordinator.
It proved that cooperative work and exchange of good pedagogical resources are to guarantee the higher educational results of the school process both for teachers and students, and a better level of communication between the students, teachers and parents.
The three life domains - family, school and students, have always been closely related in function. Children's intellectual and psychological capacity has been intensely developing under the influence of the learning process. School and moreover the already established relationships in class is what is dominant in the rank of moral values of our students. This dominant, however, is also a result of the verbal or non-verbal support and influence of the parents, and the family, as a whole. This is what makes it of great importance for us, as teachers, to involve parents in the school life as supportive, encouraging and effective partners.

Effective communication is the key factor that makes a school a desired territory. A school should attract and retain children by making them feel safe, successful, welleducated and meaningful, a part of the whole school community.
Based on curricular and extracurricular activities, in which the three target groups students, teachers and parents are involved, the following Training Aids is to be in support of teachers and people related to education to achieve a better communication in their organizations. The knowledge and experience that is shared is the final result of the hard work, inspiration and enthusiasm of the teachers from the partners' countries.
We offer you valuable ideas for developing a more successful educational process through the better communication, followed by better psycho-climate at school, increased motivation and self-evaluation.

The described activities have been put into practice and measured extremely positive impact, such as shortened distance between the families and school, higher mutual reliability and willingness to work among the three school agents.
We deeply hope that the Training Aids "Good Pedagogical Practices" will be in real help to your work.

## Section One

## GOOD PEDAGOGICAL PRACTICES - METHODS, ACTIVITIES AND

 FORMS- Psycho-training - the psychological and age characteristics of the child are considered, a parental approach to learning and successful communication. Dedicated to the relationship and communication between parent and child.
- Sporting competition - conducting outdoor and relay games, which shortens the distance between the child, parent and teacher.
- "Career Development Day"- getting to know the parents' professions and providing assistance for the professional orientation of the student
- "Reading with parents" - joint reading of parables with the family members and discussion. A feedback is provided through a drawing, comic book or essay.
- Workshop "Mirror" (swap of roles) - students interpret the professions of their parents through daily routine situations, sketches, challenging the children to perform different roles. Supporting their professional orientation.
- Photo exhibition "Smile at Me" - the photos represent moments of everyday life sending the message that those who smile, think positively.
- Comics "My Family and I" - representing typical everyday situations and communication/ language used, body language/.
- Making a dashboard with rules for ethical communication.
- Training "How to deal with aggression" - through the method "children teaching other children".
- Conducting English language courses - motivating teachers, parents and children to learn languages for successful communication.
- Conducting IT courses to increase competencies.
- Photo exhibition "My Crazy Family" - the photographs capture different moments of everyday family life.
- Meeting of the generations - gathering of people, related to school from the past and presently, to share experience, achievements and performances of talented children.
- Training "I'm tolerant" - result: creating a "Tree of Tolerance".
- Reading marathon "We read together with our friends"- feedback, creating and solving crossword puzzles and arranging illustrations.
- Exhibition "My Alien Friend and I"- ways of communication
- School projects - the use of mathematics in everyday life; creating mathematical models to describe real life situations.
- Competition "Together against the aggression" between students of different age groups with teachers' participation. In the team, each participant plays a significant role, helping to solve cases - logical, musical, sports, etc. The difficulties unite and motivate for success.
- Training "Ethics in Communication" - creating a video that illustrates ethics of behavior in public places. Application of the learned rules in real situations.
- A walk and outdoor picnic with tourist and sports games involving students, teachers and parents - communicating in an informal setting. Shortening the distance between each other.
- Role games and other activities - "How to accept different people" - joint planting of flowers, preparation of sandwiches and pastry, playing games, decoration and working out of different objects together with the children with special needs and different background.
- Competition "I Know More" - for students, teachers and parents. It takes the form of a quiz. Questions about effective communication rules, aggressive practices, presentation skills, how to be a good parent, how to be a good friend, etc. are included.
- Charity culinary bazaars - involve children and their families, teachers and staff in the school organization. Educates in humanity, empathy and mutual help.
- Club "How to present" - training students' skills to present .
- Training course "My Portfolio" - knowledge about how students make their own portfolio.


## WHAT THE PARTNERS SHARE ABOUT THE IMPACT OF THE PROJECT ON THEIR ORGANISATIONS <br> BULGARIA

Thanks to the project 'Effective Communication - A Successful Future Life' we were given the opportunity to implement various activities which proved positive impact on the three groups of agents at school - students, parents, teachers.
Our students got knowledge on how to behave in public, how to present, how to avoid conflict situations, skills to work in a team and many others. The students' participation in exhibitions, advertising, playing sketches, filming or verse writing, etc., evolved their creativity and social awareness. All kinds of activities added to the increased self-evaluation, more effective communication and lowered level of aggression.
Of extreme interest were the events in connection with students' career building. The meeting with representatives of different branches - a pastry-cook, a pilot, a fireman, a policeman, a librarian, a sculptor, a nursery teacher, a doctor and a military man, were full of excitement and of great usefulness. Students also visited different working places.
The workshop 'Mirror' made it possible for students, parents and teachers to see life from a different prospect.

All these 'real life' lessons will be very helpful for the further professional orienteering.

Undisputable positive impact has been acquired by the psycho-trainings and courses for students and parents, on which good practices for suppressing a rising anger, recognition and dealing with different types of aggression were trained. The project had a valuable impact in terms of the good treatment and attitude towards people of different physical status and background. Many team-building activities, role-plays were led as for to work and communicate together. Provoked by the theme, our students invented their own message against aggression the rap "Together Against Aggression", which under the conduction of their teacher in Music, turned into a very popular song to sing.

The culinary shows were very effective in achieving their aim as we saw all the three groups of agents united to stay together, in the name of a common cause. The sports competitions, the picnics and the hiking brought teachers, parents and students together to show that we can communicate better during informal meetings, as well as at school. We got fun together. Children were happy. As a result, parents
increased their positive attitude towards the teachers, knowing that their children are in good school care.

The competition "I Know More" involved the participation of the three target groups.
The teams had to answer questions on problems based on the already made intellectual products on the project and the trainings held. There were also questions to the audience. All the participants were awarded with a ticket to the theatre and went to see the play together.

A real feast proved to be the exhibition of pets on which children and their parents showed how well they communicate with their favourite animals and how important to people this kind of communication is. All the participants got appropriate presents. There was music, good mood and opportunity to communicate.

The courses in IT and English for teachers and non-pedagogical staff were very useful and increased the personal qualification and language competency. Capability to work in a team and the psycho-climate were improved.

In conclusion, mention should be done of the fact that all the activities on the project led to the greatest, by now, positive impact, which turned our school in a much preferred place to study - school area where you can not only get good knowledge, but acquire other competencies through the better communication.

## SLOVAKIA

We consider the most valuable activities those in which parents of our students participated, i.e. seminars, workshops and lectures. We offered them actual themes they were interested in, such as themes about upbringing and making the mutual communication more effective. Because of that, not only communication in families was better, but also communication between families and our school. Parents felt that we care about their children's future and we tried to help them deal with any educational difficulties. Parents started to contact teachers in case of any school problems and they started to be open to communication and discussion.

The activities that parents shared with their children, ('Me and My Family', 'I Know More', Christmas and Easter charity collection), were also very successful. Parents felt to be a part of school life, they got to know teachers in informal situations, thereby strengthened their confidence and built friendly relationships. Likewise, pupils enjoyed having the opportunity to show parents their school environment and they could perceive their teachers in competitive disciplines, as well as their partners. Their social atmosphere and togetherness were also encouraged.

From the teachers' point of view, we appreciate very positively the transnational meetings and the possibility of exchanging pedagogical experiences, inspiration and good practice examples, especially in the field of Mathematics and English.

## CZECH REPUBLIC

We consider as the most valuable activities with the widest impact those ones in which students, parents and teachers were involved, especially with the participation of the psychologist. All these workshops and training activities helped us to establish better relationship between families and school as an institution and us, involved teachers personally as well. And because almost all our students live near the school and the families know the others, the reputation of teachers and the whole school increased, too and other parents come to solve their problems with open minds and prepare to look for the solution together with us. For teachers these workshops were very helpful too, because we had the opportunity to get to know the family background and sometimes teachers need to have this more dimension view then only the one from the lesson. And sometimes we need to know more about our students to work with them successfully than what is possible to get to know only from them during the lesson time. By the same activities I appreciate the impact by topics about friendship - "How to Be a Good Friend and Parent", "How to Deal with Aggression" and "How to Accept Different People", because with all the topics our students can meet in everyday life and at school, too. In the last several years the amount of autistic students and students with special needs increased in our school and other students are ready to understand them better, to help them, to accept them, but on the other side, they exactly know what is acceptable for them personally and what is inappropriate behaviour, what they don't have to accept. The next activities we liked very much were those with training of presentation skills because students in the first year in the club and in the third year in different school subject tried to create their own presentation, so they improved their ICT skills and then they applied the "rules" how to present, what they are speaking about in the first project year according to their age and abilities.

## POLAND

In terms of educational, practical, 'real life lessons' and parents cooperation we find the activity - Parents' Carreer Day as one of the most effective. (We would like to continue the idea even after finishing the project, especially presenting the parents' professions in their place of work. Kids loved the activities!)

Making movies, live interviews, advert, class competitions contributed to students' higher self-confidence, made them united as a group/team, developed creativity, displayed their extracurricular abilities.
Some of the observed lessons during the international meetings inspired teachers to prepare similar lessons in our school. (Especially the Slovakian one with "Indians") As a result of 'How to Behave in Public' activities, we invented a competition for grades 4-7 entitled "Good Manners the Key to Success". It involves whole classes (not only particular students). The task is to prepare a short role-play connected with good manners in a given place. Each class draws a place or situation (e.g in the bus/train, by the table, at the cafe, at the cinema/theatre, talking to older people, how the boy should treat the girl) etc. They prepare it in class with their teachers and have to record it. Then the jury chooses 3 or 4 best role-plays, which are presented in front of the whole school and selects the winner. The winners get max points. In the meantime, each class may collect points for telling 'good morning' to teachers (in corridors), helping them, good behaviour during the lessons and wearing appropriate (elegant) clothes on special school day. We give negative points for cursing and misbehaviour of every student. At the end we count the points of each class.
The whole winning class goes to ... an elegant restaurant for a dinner where they have to obey all the rules of savoir vivre/to know how to live/!

## LATVIA

All the activities were valuable, because all of them were in order to improve the communication skills! They were valuable for parents, students and the whole school in general.
We would like to start with the seminar 'Good Practices for Better Communication between Children and Parents'. It was a great opportunity for all of us, teachers-parents-children, to understand each other better. As a result, we have worked out two handbooks - 'How to Be a Good Friend' and "How to Be a Good Parent". They both are translated into Latvian and used by students, parents and teachers now.
The training activity 'School for Parents', led by a psychologist, was also a great opportunity given to our parents to share and discuss the problems they had. At the beginning, not so many parents were involved, but then the training became much more popular with them.
The exhibition "My Family and I" involved parents in the school life. Children were so happy to work together with their parents and so proud of them.

The main thing is that our project activities improved communication between parents, students, teachers and we learned how to communicate better, how to be polite, how to protect those who are not very strong physically or mentally. It was an opportunity to be creative!

## SLOVENIA

Through the activities in the Erasmus+ project we have enriched our communication between three agents that usually communicate in school - teachers, pupils and parents. For example, the activity "Mirrors", in which pupils, teacher and parents, exchange roles, successfully helped with understanding of other people's perspectives. Then, various picnics, quizzes, competitions and sports activities for pupils, parents and teachers helped to create relaxed and friendly environment that contributed to better relationship and consequently more effective communication between all three groups. Furthermore, the project encouraged us to organise many training activities on the topic of tolerant behaviour, which proved as very useful and needed in today's school environment.
The activities in the project were focused also on understanding of other countries', especially on cultures of project partners. Also, great emphasis was placed on the values, such as friendship, tolerance, respect and family, which we believe are basic for creating a better future for all of us.

At the same time, project activities enabled pupils to improved usage of ICT technologies by involving students into activities that involved the active use of modern technologies such as camera and computer. Throughout the project, training activities were organized on this topic. Furthermore, pupils had to create videos and photo exhibitions that improved their knowledge of handling with these technologies. Before this project, we had not used and involved students in the usage of ICT technologies so much. The project encouraged us to start using modern technologies more often and we are sure that we will keep up with similar activities even after the project ends.

Moreover, we observe that due to the projects activities many new, innovative and modern pedagogical practices were used at our school. Also, at the project meetings we had the opportunity to observe school lessons of other schools, which gave us many new ideas, enabled us to exchange effective pedagogical practices, broadened our horizons in the field of teaching methods and techniques and improved the communications and mutual support with our project partners.

Throughout the three years of the project, numerous activities were developed that transformed the school environment and greatly improved the relationships and communication among all educational agents: parents, students, teachers, technicians, operational assistants and other educational community. It also improved and approached the school of local institutions and the community in general.

The activities (games, competitions, lectures, seminars, workshops...) made with the students improved and promoted the relationships between all the students of the different schools of the group and the different years of schooling. Many of the activities, especially in the area of expressions were carried out between regular students and students with special educational needs. They have proved to be very beneficial to both students since while regular students have had the opportunity to interact with other classmates and understand their limitations and the difficulties they sometimes feel in doing activities as simple as manipulating a pencil or a brush. The students with special needs were also very enriching because they lived with colleagues and learned many things that they taught him.
The use and manipulation of new technologies (computers, mobile phone, interactive whiteboard, camera, web 2.0 tools) allowed students to learn or improve using these tools to learn and deepen their knowledge or prepare presentations and appealing materials to present to colleagues and communicate.

There was also a great rapprochement between the parents and the school. There were many activities in which the parents were present (workshops, seminars, lectures, contests, trainings, games, parties, markets). In all these activities the parents interacted with the students, the teachers, the operational and technical assistants, which promoted the rapprochement between all and a better empathy and understanding of the different roles assumed in the school community
During these three years, many training actions were carried out for teachers and operational assistants in the ICT, English language, environment and communication areas. These training actions were developed in partnership with the teacher training center allowing the participants the necessary credit to progress in their career. The evaluation of these formations was very positive and the trainees suggested the continuity and proposed new themes and in some cases the deepening of the actions that they carried out. The acquired knowledge had and will have a great impact in the future performance of these professionals and also served for people to
know each other better and improve the communication and the relationship between all of them.

The exhibitions carried out with the work developed by all the agents involved, allowed the dissemination of the work done, its value and motivated the students to continue to work even better.

Many of the activities developed were partnerships between the school and local institutions (Casa João Cidade, Centro Juvenil, Escola de Música, Espaço do Tempo, Grupo de Teatro da Escola, Oficina da Criança). All these partnerships allowed a great rapprochement between the school and the local environment, and prepare a future with greater interactivity between all.

## Part 2

INTERACTIVE LESSONS WITH GOOD PRACTICE

## BULGARIA

## CULTURAL HERITAGE OF MY TOWN - BINARY LESSON IN MATHEMATICS AND ENGLISH LANGUAGE CLASS VI

There are many reasons for children's willingness to go to school. But the only reason for this, without hesitation, is the possibility to spend time together with their classmates and to feel as a part of class or school community.
Educational process is a social activity and teachers have the responsibility to teach their students through innovative and interactive methods, to join each of them in a class social group.
The group work and team work organize students during the lesson and provoke them to show and use their skills in the best way. Working in a group is a nice means of socializing and establishing basic knowledge for the future life. In the group students learn to communicate, to support one another, to express their opinion and to take responsibility for making decisions.

People acquire knowledge in different manners because of the different types of intelligence they have. In our view, educational system could become better if teachers try to improve the students' intelligence in any of its aspect - linguistic, spatial, naturalist, musical, logical - mathematical, existential, interpersonal, bodily kinesthetic.

The "topic" teaching or teaching by "phenomena" is something different from a typical educational process. Instead of ordinal subject lesson - Maths, English, Science, etc. the aim is introducing "phenomena" in their whole aspects. In our
lesson "Cultural Heritage of My Town" students learn the phenomena through the subjects Maths, English, History, Social Studies and communicative skills. By a variety of activities and project work students can recognize most types of their intelligence.
The problems and tasks, prepared in advance for the lesson, aim to keep students' knowledge on a good level, to fill their gaps. Teacher emphasizes on the main facts and principles necessary for solving the Maths problems. This provides students with the opportunity for developing their critical thinking and creative work.

## The aims of the lesson are:

- Communicative skills and skills to analyze
- Argumentation of the choice in solving the problem according to criteria
- Skills to formulate and extract of information, read and interpret facts
- Maths problems for group work

This type of lesson can be easily adapted to architectural monuments from students' town.

## Procedure:

At the entrance of the classroom a box with sheets of paper is put. On entering the class, each student picks a sheet on which their seat is written, according to the geometrical figure. Everybody has to say the word from the sheet in English aloud and then in Bulgarian to form a group. Each group consists of 4 members by hazard. During the lesson they solve problems, discuss them, make a model, share responsibility.

## Task 1

It is presented like a puzzle. Students have to stick it, to understand the condition, to offer the solving, to write and present to the other groups. After finishing, the teacher and students discuss the mistakes together, show the best results of the group with the best result. In this way, students understand the usefulness of working in groups.

## Task 1- materials and exercises

A picture of Varna Cathedral as a puzzle of geometric figures. On the back of the puzzle there is a text about the history and the importance of the cathedral in English.

## English teacher

1.Read the text.

The Dormition of the Mother of God Cathedral is the largest and most famous Bulgarian Orthodox cathedral in the Bulgarian Black Sea port city of Varna, and the second largest in Bulgaria. Officially opened on 30 August 1886.

## 2. Answer the questions.

- What is the name of the cathedral?
- What kind of Christian religion is mentioned in the text?- Orthodox or Catholic?
- Do you know which is the first cathedral in Bulgaria? Where is it? What is its name?
- When was Varna cathedral open?


## 3.Fill in the gaps:

Dormition of the $\qquad$ of God Cathedral is the largest and most $\qquad$ Bulgarian

Orthodox cathedral in the Bulgarian Black Sea $\qquad$ city of Varna and the second
$\qquad$ in Bulgaria. Officially opened in $\qquad$

## Maths teacher

Students look at the picture again to notice the architectural details. They have to find the geometrical figures.

- Which geometric figures are included in the tower?
- Find the area if its diameter is 1 m



## Task 2

The second architectural monument is Varna Opera Theatre


## Maths teacher

Calculate how many $\mathrm{m}^{2}$ glass is necessary for making this model of window if you know that $10 \%$ of the glass is lost after the cutting.

How many columns are there in front of the building and how many littres of paint we need for their painting if 100 ml of paint is needed for $1 \mathrm{~m}^{2}$.
(The measures in the picture are in cm )
Solution:
$a=260 \mathrm{~cm}=2,60 \mathrm{~m}$
$\mathrm{b}=580 \mathrm{~cm}=5,80 \mathrm{~m}$
$S=a . b$
S=2,60.5,80=15,08 $\mathrm{m}^{2}$
$15,08+10 \% \cdot 15,08=15,08+0,1 \cdot 15,08==15,08+1,508=16,588 \mathrm{~m}^{2}$
$16,588 \mathrm{~m}^{2} \approx 17 \mathrm{~m}^{2}$ glass
Cylinder
$\mathrm{d}=0,8 \mathrm{~m}, \mathrm{~h}=5,8 \mathrm{~m}$
S=P.h
$\mathrm{P}=\pi . \mathrm{d}$
$P=3,14.0,8=2,512 \mathrm{~m}$
$\mathrm{S}=2,512.5,8=14,5696 \mathrm{~m}^{2}$
$14,5696 \mathrm{~m}^{2} \approx 15 \mathrm{~m}^{2}$
6 columns $\times 15 \mathrm{~m}^{2}=90 \mathrm{~m}^{2}$
$90 \mathrm{~m}^{2} \times 100 \mathrm{ml}=9000 \mathrm{ml}=91$

## English teacher

Problem (the problem is in English)
Calculate the number of the seats of the $1^{\text {st }}$ row of the ground floor, if you know that:

- they are the same as the number of the seats of the $9^{\text {th }}$ row,
- $\quad 2^{\text {nd }}$ and $8^{\text {th }}$ rows have one seat more
- $\quad 3^{\text {rd }}, 4^{\text {th }}, 5^{\text {th }} \cdot 6^{\text {th }}$ and $7^{\text {th }}$ rows have two seats more
- $10^{\text {th }}$ row has 2 seats less.

All the seats on the first floor of the theatre are 201

| row | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## Maths teacher

## Problem

| row | 1 | 2 | 3 |
| :--- | :--- | :--- | :--- |

Find the seats of the second row on the first balcony if you know they are 0,5 less from the average of the seats on the 1 and 3 rows
Numbers of 22 ?

## seats

## Solution of the problem

1 and 9 rows: n
2 and8 rows: $\mathrm{n}+1$
3, 4, 5, 6 и 7 rows: $n+2$
10 row: n-1
Total: 201
2. $n+2 .(n+1)+5 .(n+2)+n-1=201$
$2 . n+2 . n+2+5 . n+10+n-1=201$
$10 . n+11=201$
10. $n=201-11$
10.n=190
$\mathrm{n}=190: 10$
n=19
1 and 9 rows: 19
2 and 8 rows: 20
3, 4, 5, 6 и 7 rows: 21
10 row: 18
Total: 201

## Solution 2

$a=22$
$b=15$
Average
(a+b):2
$(22+15): 2-0,5=37: 2-0,5=18,5-0,5=18$
English homework
Euxinograd Palace


- Find the information about Euxinograd on the Internet and make a poster.

Describe:

- When was it open?
- Where is it situated?
- How many floors and rooms are there in the building?
- What is there in the park?


## Maths homework



## EUROPEAN BREAD - BINARY LESSON IN MATHEMATICS AND ENGLISH LANGUAGE CLASS VII

## Motives for choosing the theme

Many of the problems in life do not sound like a math job, but they still have a certain mathematical content. To solve such problems it is necessary to create a mathematical model and apply basic mathematical knowledge. Alongside with this, many of the valuable information in the information flow that is needed for educational purposes or simply for application in everyday life is found in English. This determines the need to develop skills for reading, comprehension and the most important reading for gist in order to make the right decisions. Successful application of mathematics and English requires:

- very good knowledge of the lexical and grammatical meaning of the words in the English language;
- interpretive skills;
- very well- developed reading for gist skills;
- skills to understand the relationships in the task and to identify the task itself;
- use of strategies, rules, facts and formulas;
- extracting information from tables and graphs;
- solving equations;
- summary and evaluation of the results obtained.


## Main objectives

Developing the ability of students to use their knowledge in English and Mathematics to deal with different real life situations.

## Expected results

- Read and comprehend a mathematical problem through the use of English;
- Identify the problem;
- Assess correctness and rationality in a specific situation and substantiate conclusions;
- Model with numeric expression.


## Lesson plan:

1. Students have the task for searching information and analyzing the lifestyle and eating habits of the European in the XV - XVIII c. The data they find is given in two texts in English.
2. Each student receives a sheet of the main vocabulary referred to the texts of the tasks 1 and 2. Together with the English teacher students discuss the key words that are essential for the successful understanding of the task.
3. Each student receives a task sheet of Task 1, containing a text and diagram describing basic data on the lifestyle of the European in the 18th century in English. Applying their knowledge and with the help of the English teacher, students translate the text and find the necessary information.
4. After reading the task in Bulgarian language, together with the Maths teacher, the pupils analyze the data, determine the basic dimensions and the relations between them and "translate" the mathematical language into the meaningful information.
5. Working in pairs, students answer the questions in Task 1 on the worksheets, applying knowledge about the percentage and relation of two numbers.
6. Students discuss with teacher the results of task 1.
7. The Maths teacher hands out a second worksheet with Task 2 in English - they jointly analyze a linear chart and answer the questions,
8. Together with the mathematics teacher, the pupils draw a mathematical model of the task. After that students perform a gap-filling in a text in English.
9. At the end of the lesson, students receive a homework assignment paper related to the analysis of today's bread production data. They also have the texts of tasks 1 and 2 in Bulgarian, so that they are able to revise the learnt in class, at home.
10. In the last five minutes of the lesson each student evaluates the benefit of the learned in English and mathematics during the lesson on a histogram on the worksheet.

## Worksheet:

## Worksheet English Vocabulary

## Task 1


YIELD YEAR almost YEAR

middle

a lot of
for a year

## Useful Vocabulary:

wheat - a crop culture that bread is made of quintal - a measure of weight equal to 50 kg harvest - the process of collecting crops in the midsummer /жътва, събиране на реколтата/
yield - the amount of agriculture from a particular field, vineyard or orchard /добив/ average yield - the middle calculated amount of an agriculture /среден добив/ a fertile year- a year in which the amount of the crops, vegetables and fruit is extremely large /плодородна година/
per year - for one year/годишно/
approximately - close to a particular amount of /приблизително/

## Task 2



## Useful Vocabulary:

income - the amount f money that a person gets usually for a month of work occupation - job
distribution of budget partaking the money for the expenses for a period famine - when there is not enough food, people suffer or even die from hunger merchants - sellers

## Other words:

slaughterhouse - a place where animals are killed for meat (кланица) prevalent - the one that is the most seen, takes a greater space (преобладаващ) relative prosperity - satisfactory level of success for a moment (относителен просперитет)

It is assumed = It is reckoned= It is accepted (Счита се...)
What's the ratio = What's the relation...? (Какво е съотношението...?)
exceeds - something that goes beyond its frames or size (надхвърля)

Bread is the main food of the European in the XV - XVIIIth century and the main occupation for cities, states, merchants and people to live for is "to have your own piece of bread".

Task 1. The Circular diagram presents the distribution of the budget of a construction worker from Berlin in 1700.
A) What is prevalent in the daily menu?
B) How many percent of this family's income is spent on food and drink?
C) How many percent of family food costs the bread takes?
D) According to historical data, a kilogram of wheat, for that time, cost 11 times less than a kilogram of meat from the slaughterhouse. What is the ratio of the quantity of meat to the amount of bread at the table of the Berlin family?

- clothes
- lighting, heating
- rent
- drinks
- meat products
- other vegetable
- bread

Task 2. For one year a worker worked approximately 3000 hours of work. His family consists of 4 people and uses approximately 12 quintals of wheat per year (quintal equals 50 kg ).
A) How many hours should they work to get a quintal of wheat with the salary they received?

This number of working hours historians call the real price of wheat. When the real price of the wheat exceeds 100 hours, the worker starts a difficult life and at a real price of 300 hours there is a hunger.
B) Using the figures in the graph, for real grain prices in Strasbourg between 1700 and 1710. Fill in the text.

In the period 1700-1710. The most fertile year is ....... Relative prosperity can be assumed in the three-year period from $\qquad$ to $\qquad$ .Then the real price of the wheat is/rising/falling/ $\qquad$ . Since $\qquad$ starts a period of famine.
C) How many percent of the working hours in 1706 is smaller in comparison with the one in 1700 year?
D) If two people (mother and father) are working in the family and it takes 2 times more for the mother to work, find out how much time they both need to produce together the required amount of wheat for the month.


## Answer sheet:

## Task 1.

A)
B)
$\left.\begin{array}{|l|l|l|l|l|}\hline & \begin{array}{r}\text { In the period 1700 - 1710. The most fertile year is ....... Relative } \\ \text { prosperity can be assumed in the three-year period from ........ to ....... } \\ \text { Then the real price of the wheat is /rising/falling/ ............ . Since } \\ \ldots . . . . . . . . . ~ s t a r t s ~ a ~ p e r i o d ~ o f ~ f a m i n e . ~\end{array}\end{array}\right\}$

HOMEWORK: A farmer sowed two fields of wheat. After the harvest he calculated that the average yield of the field $A$ was 400 kg per hectare. Of the field $B$, the farmer harvested 11 tones more grain than from field $A$.

|  | FIELD A | FIELD 5 |
| :---: | :---: | :---: |
| Area (dc) | 40 | 60 |
| AVERAGE YIELD $(\mathrm{kg} / \mathrm{dc})$ | 400 |  |

A) Find the average yield of wheat of the fields $A$ and $B$ and fill in the table.
B) How many kilos of decare has the farmer bred on average on both fields?

Task 3 On the coordinate system on the abscissa are the subjects and on the ordinate are the grades 1 to 6 . Build a histogram that reflects the benefits from the learned during the lesson in English and Mathematics.


## LESSON PLAN: ENGLISH ESL, FIRST GRADE

Type: integrated, new vocabulary
Target groups: 6-7 aged
Participants: A group of kindergarten; First graders
Time: 35 min .

## Main objective

Kindergarten: To introduce the school to the children and involve them in lesson activities.

First graders:To introduce some Easter vocabulary and listen to an Easter song.
Key words: Easter, bunny, egg, Red, green, blue, yellow

## Receptive Language

Easter bunny
You're so funny.
When you run and hop, hop, hop.
Easter bunny
You're so funny
When your ears go flop, flop, flop.

## Classroom Language

Point to...
Who is it?
Is it a.....?
What is it?
What colour is it?
Materials: Mini flashcards, Worksheets, Colour pencils, Easter bunny toy, Book"Hooray! Let's play!"- Helbling Languauges

## Activities

During the lesson the children from the kindergarten sit next to the pupils and are encouraged to do the activities together.
For warming-up all the children watch, play and sing the song "If you're happy".

The teacher introduces the new vocabulary by mini flashcards. Children repeat several times. Teacher shows the cards in order and in the reverse order. After that he/she asks questions like "Is it a...?" or "What is it?" partly uncovering the cards.

To introduce the lyrics of the song the teacher uses an Easter bunny toy. He/She mimes the activities and encourages the children to do the same.

After learning the song the teacher gives the children worksheets. They work individually or in a team to do the most beautiful colouring of the Easter
 eggs. During this activity they listen again the song. This helps them to learn the song by heart in a spontaneous way. In the end of the lesson the teacher shows the nicest coloured worksheets and give the positive assessment to the children's work.


## COMMON FRACTIONS

 ON THE DUSTY PATH OF HISTORY...
## Motives for choosing the theme:

Mathematics deals with the abstract objects and structures created by mankind. However, the validity of its conclusions extends to many scientific areas. The history of common fractions and the solving of ancient tasks is a good reason for students to follow the historical path of numbers and to revive their interest in abstract science.

## Main objectives:

- Creating a positive attitude towards mathematics as a part of human culture and scientific and technological progress.
- Pupils can see the abstract beauty of mathematics by getting to know the long historical path of common fractions.
- Mathematical literacy is the ability of students to analyze and rationalize different life situations and to communicate effectively when they set, solve, or interpret mathematical problems involving quantitative, spatial and other mathematical terminology and concepts.


## Expected results

- Students are able to perform actions addition, subtraction, multiplying and division of common fractions; calculate numerical expressions; find a fraction of a number.
- Students are able to appreciate fidelity and rationality in a particular situation and can make valid conclusions.
- Students evaluate and interpret the result obtained in modelling and provide an expected result within certain frames.
- Model with numeric expression.

Students are given the task in advance of making clothing from the ancient Egyptians or the ancient Romans in order to seek information about the historical period and to enrich their knowledge, and during the lesson to immerse themselves in the atmosphere of the past times. Creating the elements of clothing is another reason for communicating to the child and his / her parents.

The project was realized on 10th January, 2017 with twelve-year old 5th-grade students from "Hristo Botev" Primary School. Both parents and friends of the children actively participated in making the clothes.


## Plan of the lesson

The lesson is developed in a presentation
Mathematics is a world of abstract, "simple" numbers, ideal shapes, universal theorems, and algebraic formulas, but it is deeply rooted to the real world of humans and animals, of stones and soil.

- Numbers were invented for the first time in relation to particular subjects.Prehistoric people and the first civilizations create mathematics as a means of handling real objects and quantities.
- Therefore, the mathematics of the pre-classical age deals with things like counting animals, measuring fields, grain weighing, and building construction. Thus ancient Egyptians, Babylonians, Indians and other pre-classical peoples laid the foundations of arithmetic, geometry, algebra and numerical theory.
- In all languages the concept of a fractional number is denoted by words with the same root as "crushing", "breaking"; the Latin "fractura" is derived from "frango" ("break").
- Fractions are a means of calculating a part of something whole. In today's system of recording common fractions, they are represented by two numbers one by one separated by a fractional line. Above it is the numerator that shows how many equal parts of the whole we have separated. Below the line is the denominator, which shows how many equal parts we have divided this whole. Thus, in the fraction $1 / 4$ the denominator shows us that the whole is divided into four equal parts, and the numerator specifies that the given fraction represents one of these four parts.


## Egyptian fractions

Eighty-one out of of the 87 tasks in Rind's papyrus include the use of fractions. The Egyptian method of calculating fractions is the most remarkable side of Egyptian arithmetic, some scientists say.


Find the map of Ancient Egypt: Which countries bordered the Ancient Egypt? Did this matter to the way of spreading mathematical knowledge?

$\sum_{||| |} \frac{1}{4}$

1. Create a task using the record of these fractions and the current action symbols (+,-,., :).

For example:


Solve the problem using the modern record of common fractions.
Each team places their condition on the board and assesses the correctness of the opposing team's decision.

1. $\frac{2}{11}=\frac{1}{6}+\frac{1}{66}$;
2. $\frac{2}{7}=\frac{1}{6}+\frac{1}{14}+\frac{1}{21}$;
3. $\frac{2}{13}=\frac{1}{8}+\frac{1}{52}+\frac{1}{104}$;
4. $\frac{2}{99}=\frac{1}{66}+\frac{1}{198}$.

## 2. Task for students

## Check the record of the fractions taken from the "Akimess's Papyrus"

From Rind's papyrus (around 1700 BC ). Two tasks taken from there:
a) A mathematician counted 70 animals in a herd led out by a shepherd to a graze. He asked the shepherd how many animals were there in the the flock he cared about. The shepherd replied: "I have taken out to pasture two thirds of thirds of the flock, that they have entrusted to me." How many animals were there in his flock?

b) We also find formal tasks in this ancient work. Determine $x$ from

$$
\left.\left(x+\frac{2}{3} x\right)+\frac{1}{3}\left(x+\frac{2}{3} x\right)\right] \cdot \frac{1}{3}=10
$$

The tasks are solved by all the students together.
The teams receive worksheets with the terms of the tasks
The Romans also initially used only specific fractions, in which the unit was divided into 12 equal parts. 1 "oz" equals 12 ounces.
Instead of $1 / 12$ the Romans said "one ounce", $5 / 12$ - five ounces etc. 3 ounces they called a quarter, 4ounces - a third, 6ounces - a half etc. It was a slow process to change the use of concrete to abstract fractions, which are not determined by an equivalent measure.
3. Solve the problem using the modern record of common fractures:

Add to $10 z 6$ ounces. Multiply the resulting sum by one ounce. Then reduce by one ounce. Increase the result twice. How many ounces have you received?
Solution: $12 / 12+6 / 12=18 / 12$
$18 / 12$ * $1 / 12=3 / 24$
$3 / 24-1 / 12=3 / 24-2 / 24=1 / 24$
$1 / 24$ * $2=2 / 24=1 / 12$

Answer: 1 ounce


## 4. Task for the Egyptian team:

The task is for individual work. Each pupil receives a "papyrus" with the task and a work card.

By the use of aliquot fractions colour the mosaic with a custom motif. Colour that part of the mosaic that corresponds to the specific aliquot taken as part of the figure of the mosaic. Your mosaic consists of 60 squares. Why do you think that number is chosen? First count the number of squares of each colour. Plan your mosaic. Realize your model plan.
$1 / 2$ - red; $1 / 4$ - blue; $1 / 10$ - green; $1 / 12$ - yellow; $1 / 15$ white

|  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

## Answer:

30 red; 15 blue; 6 green; 5 yellow; 4 white


## 5. Task for the Egyptian team:

The task is for individual work. Each pupil receives a "papyrus" with the task and a work card.

Use Roman ounces and colour mosaic with a custom motif. Colour that part of the mosaic that matches the corresponding ounce taken as part of the mosaic figure. Your mosaic consists of 60 squares. Why do you think that number is chosen? Count the number of squares of each color beforehand. Plan your mosaic. Realize
your model plan. What would you use the motif created (traditional Bulgarian embroidery, a pattern of a fabric, abstract art, other ...)?
1 ounce - white; 2 ounces - yellow; 2 ounces - green; 3 ounces - blue; 4 ounces red


Answer: 20 red; 15 blue; 10 green; 10 yellow; 5 white

6. Mathematics expands our perception of beauty and grace and helps us to formulate our thoughts clearly and in an appropriate language.
The first common mathematical principles were formulated around 3,000 BC. and derive from practical applications.
Today, mathematics is studied as an abstract science and used to solve practical tasks facing mankind.
7. Tasks for homework:

## 1.Task \# 26 from Rind's papyrus

"The quantity together with the quarter gives you 15."
Answer: 12
2. (Adam Risch XVI c.) So, a son asked his father how old he was. His father replied this way: "If you were my age, half of my years, a quarter of them and one more year, you would be 134 years old."
Answer: The father is 76 years old.
3. (Leonti Magnitsky XVII c.) A father asked his son's teacher how many children he was teaching. The Master replied, "If I had as many students more as I have now, and then a half more and a quarter more, and also your son, they will be exactly 100. ."
Answer: The teacher trained 36 students.

Each pupil gets his homework on a "papyrus".
In order to receive feedback at the end of each class, each pupil receives 3 green, yellow and red sheets of paper with questions to answer:

On the green leaf they answer the question: What did I understand best and what I liked most during the lesson?
On the yellow leaf they answer the question: What did I not fully understand?
On the red sheet they answer the question: What did not I understand and did not like in the lesson?

TITLE OF THE LESSON: MY DOLL TUTTI FRUTTI /PROJECT WORK/
Grade: Third
This project aims to teach Students how to use both vocabulary on "parts of the body" and "fruit and vegetables" in body description.

## Motives for choosing the theme

Project works are a very effective and easy way to revise and evaluate the degree of Students' knowledge. It is a very attractive and preferred activity by most students because through projects they have the opportunity to show their emotional intelligence and creativity, which in turn, provides extremely useful information to the teachers to form their individual approach.

## Objectives

- Revision of vocabulary on "parts of the body".
- Revision of vocabulary on "fruit and vegetables".
- Writing skills - Students learn how to write a description of people.
- Speaking skills - Students talk about their self-made dolls.
- Communicative skills - Students improve their skills by playing dialogues.
- 

Representative skills - Students learn how to behave while presenting their project.

- Work with parents - Students have the right to make their dolls with the help of their parents, which is recommended.
- Provoke Students' creativity and improve their self-confidence in learning English -"Learning English is Fun."
- Grammar involved;
- demonstrative -"This is.../ These are...";
- verb "to be" - is/are;
- personal pronouns: it, they;
- singular and plural forms of the noun; countable/uncountable nouns;
- possessive adjectives - "my/his/her";
- adjectives: "big/small/thin/fat/long/short";
- colours;
- possessive case - 's;
- questions with the question word "What".


## Pre-task

Students get as a homework to make a doll of fruit and vegetables with the help of their parents. They need to use only fruit and vegetables from the learnt vocabulary and only one unknown item.

In the previous lesson Teacher has given a model of a description of a doll.

## Model:

"This is my doll. His/ Her name is...Frutta/Tomatina/Carro... . His/ Her head is a.../an... .The Doll's hair is ... . It is long/short/green/brown. This is his/her nose. It is a.../an... . It is /big/small. This is the Doll's mouth. It is a.../an... . It is red/black. These are his/her eyes/ears. They are... . His/ Her body is a.../ an... . It is fat/slim. His/ Her arms are... . They are long/short. His/ Her legs are... .They are short/long. ..."

The project presentations can be set for two lessons. The dolls could be displayed in an exhibition. All of the dolls and their presentation can be evaluated with a good mark.

| STAGES | PROCEDURES | INTER- <br> ACTION PATTERNS | TIMING | RATIONAL |
| :---: | :---: | :---: | :---: | :---: |
| STAGE 1 <br> Warm-up | T focuses Ss' attention on the title of the project My Doll Tutti Frutti emphasizing on the aim of the lesson. Then $T$ points to the model, that Ss need to follow while representing their dolls. The model is written on the board and given as a copy to each student. | Discussion T-Ss | 5 min | Ss exercise the model they need to follow |
| STAGE 2 <br> Checking of homework | 1. T asks two volunteers to read aloud the descriptions of their dolls and show the dolls to the class. <br> 2. T explains if there are some mistakes or evaluates the correctness of the read homework. | T-Ss | 5 min | Ss listen to their classmates' descriptions and presentation of dolls and can ask questions |


|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| STAGE 3 <br> Presentati on of the self-made dolls <br> STAGE 4 <br> Extended work <br> Pair-work | Ss present and describe their dolls. <br> Teacher writes one or two of the doll's descriptions on the board, filling in the model. <br> Students also fill in their copies. <br> T writes the questions on the board: <br> What's your doll's name? <br> What is his her name? What is his hair/head/nose/mouth...? <br> What are his/her legs/arms/eyes/ears...? <br> Ss play dialogues in pairs talking about their dogs | Ss - T T-Ss <br> Ss-Ss | 20 min <br> 10 min | Ss develop their speaking skills. <br> Ss develop their writing skills <br> Ss develop their writing skills <br> Ss develop their communicative skills |

## LATVIA

## HEALTHY EATING - HEALTHY LIVING

Aim of the lesson: to pay attention on
the role of healthy nutrition and physical activities in people's lives

## Lesson objectives:

- To identify healthy food and lifestyle choices
- To practice using the vocabulary of physical activity, food and drink
- To inform about "global hunger"

The group of age: 12-14 year old students

Subject: The English language
Class: 7

## Stundas gaita

| Stundas gaita |  |  |
| :---: | :---: | :---: |
| Time | Activities | Resources |
| 3' | Students go to the board and write or draw everything they think is related to "Healthy Living". |  |
| 8' | Students discuss: <br> what the healthy foods are; <br> why physical exercises are necessary; <br> why many people around the world don't have enough food <br> - what is „hidden" hungry |  |
| 10' | Students watch the film about the girl who In 1990, as a seven-year-old school girl in Cape Verde, Vera Tavares started receiving WFP school meals. Those meals kept her in school where she studied and finished her education. Now she works for the ministry of education. Against the old images of the seven-year-old Vera, students hear the Vera of today talking about how school meals changed her life and discuss it in pairs. | http://www.wfp.org/video <br> vera-goes-school |
| 10' | Students show their own posters and Power Point presentations about 'Healthy Living" made at home. Classmates ask the questions and discuss about them. |  |
| 7' | Student watch the presentation "10 tips for healthy living" | https://www.youtube.co watch?v=sKkKLduuO1 |
| 2 | Finally, the students do funny physical exercise. | https://www.youtube.co watch? $\mathrm{v}=$ ZanHgPprl-0 |



THE LESSON: LINES
The group of age: 8 year old students

## Class 2

## Subject: Mathematics

## Lesson objectives :

- to present different kinds of lines for students
- to develop students' logical thinking and imagination
- to learn students to collaborate


## Activities

Students observe different types of lines on the board and name them, after that try to find them in everyday objects around the classroom. - 5'
Students do practical work in groups: 8'

- students make different types of lines from buttons, sticks, strings ,pens ,pencils,etc.
- Students move around the classroom and look at classmates' works

Students( using different materials) make pictures in groups of six students. They have to use only definite type of line. The titles of the pictures are given by the teacher "Autumn in the forest","Autumn in the garden", etc. - 15 '
Students present their works to classmates and stick them on the board. - 10'
The teacher sums up the results of the lesson-2'

Resources: Poster with different types of lines
Buttons, different sticks, ropes, pieces of string and other subjects, Glue and paper


## THE PROPERTIES OF WATER

Aim of the lesson: Observe the qualities of water

## Lesson objectives:

- to identify the qualities of water by making experiments
- to learn students to make experiments and work in groups
- to learn students to make a conclusion
- to learn students to be eco-friendly and save water

The group of age: 8 years old students; Number of students 26
Class 2
Subject: Science Studies


| $5^{\prime}$ | The teacher asks students <br> what they know about <br> water.Some answers are: In <br> adult men, about $60 \%$ of their <br> bodies is water, $3 / 4$ of the <br> earth is covered by water. <br> The teacher tells the students <br> that they are going to make <br> experiments to know more <br> about <br> transparency,liquidity, smell, ta <br> ste and solubility of water. <br> Experiment $\quad$ 1. Students <br> throw coins into the glass with <br> water and then say what kind <br> of coin (1 euro, 2 euros or 50 <br> cents) it is. Students make a <br> conclusion-water <br> transparent. <br> Experiment 2. Students pour <br> water from one glass into <br> another one and make a <br> conclusion - water is a liquid. <br> Experiment $3 . S t u d e n t s ~ s m e l l ~$ <br> iuice and then water. <br> Students make a conclusion - <br> water does not smell. <br> Experiment 4. Students drink <br> water and juice. Students <br> make a conclusion - water <br> does not have taste. <br> Experiment $5 . \quad$ Children <br> dissolve salt, sugar, soda in <br> water. Students make a <br> concllusion - water is the |
| :--- | :--- |




## THE TITLE OF THE LESSON: I AND MY FRIENDS

## Aim of the lesson: Development of reader's abilities

## Lesson objectives :

- to identify what is rhythm
- to identify what is tact
- to practice identifying rhythm and tact in a poem

The group of age: 10 years old students
Class 5
Subject: Russian Literature

| Time | Activities |
| :--- | :--- |
| 10 ' | Introduction |
| The teacher shows the photo of Daniil |  |
| Kharms.Students discuss about the |  |
| person's photo. |  |
| The teacher tells the students about |  |
| Daniil Kharm and students read the |  |
| poem "Million" written by him. |  |


|  | the piece of music-it's rap. StudentsMusic is by Tirkun \& ENSB Blaze <br> try to rap the poem. |
| :--- | :--- | :--- |
| $5^{\prime}$ | The teacher tells the students about <br> Wimellbuch, A wimmelbook is a <br> special kind of picture book, distinct <br> from other large format picture books. <br> In contrast to puzzle or search books, <br> wimmelbooks rely on their readers to <br> find their own way through the rich <br> material they present and do not direct <br> readers' attention by phrasing explicit <br> search tasks. |
| 10 Students are given special cards |  |
| where to illustrate the poem .Every |  |
| student draws a small picture. |  |
| Students glue their works on special |  |
| paper. |  |
| As a result students make their own |  |
| page of wimmelbook |  |
| The teacher thanks students for the |  |
| lesson. |  |

## CHZECH REPUBLIC

## GEOGEBRA

YEAR : 9
DATE: April 27, 2017
TYPE OF LESSON: practicing https://youtu.be/009cf88cChl
TOPIC: Functions
AIM: to practice and reinforce pupils' skills in functional graphs
Introduction: Review of linear functions
We create graphs of functions without limitations by using the Excel spreadsheet to create tables for graph functions. With the help of function PrtSc, we transfer the graphs to the power point. Before we begin, we review what the graph of the function is, when it is increasing or when it is decreasing.

## 1) Create functional graphs + a chart:

1) $\quad Y=x$
2) $\quad Y=-x$
3) $Y=x+2$
4) $X=2 x+2$
5) $\quad Y=-2 x-2$

From the graph, specify the intersections with the axes of each function, determine whether the function is increasing or decreasing.

## 2) Building quadratic functions:

Before we type, we repeat what quadratic functions are, what their graph is, what we can determine in them. Then we enter without intervals:

1) $y=x^{2}+x+3$
2) $y=4 x^{2}+x-2$
3) $y=-x^{2}+3$
4) $y=x^{2}-3 x-5$
5) $y=-x^{2}-3 x-5$

Entering quadratic functions into the program is the same as for linear functions. What is a graph of quadratic equations? Compare the graphs, determine functional maximums and minimums.

## 3) Interpretation: Determination of function intervals

So far, we have been working in a phase without intervals. Now the function will be limited by an interval. Entering the function into the input is the same, followed by entering the interval value.
The input of function will look as follows: $2 x+2,-3<x<3$ enter, make graph function, enter description and value function, do not scan and save to the power point. Specify the value field.

$$
2 x+2,-3<x<3
$$

1) $X=2 x+2 \quad x \in<-3,1)$
2) $Y=-x+5$
$x \in(-2,8>$
3) $Y=-2 x-2$
$\mathrm{x} \in(-2,3)$
4) $=x^{2}+x+3$
$x \in<-2,2>$
5) $y=4 x^{2}+x-2$
$\mathrm{x} \in<-1,1)$
6) $y=-x^{2}+3$
$x \in(-2,2)$
Record the interval and specify the definition field and function value range. An auxiliary grid will help you.

## Conclusion:

The output of the lesson is to make graphs by using the functions of the geogebra program. Then all the data and the complemented knowledge of the functions are saved into the power point program.

## LESSON PLAN - SPLITTING OF ANIMALS

| The title of the lesson: | Splitting of animals |
| :--- | :--- |
| Aim of the lesson: | Discover the general ways of splitting of <br> animals |
| Lesson objectives: | To teach pupils new categories for animal <br> splitting and the differences among them <br> To improve their understanding of the text <br> and application of the new information <br> To broaden the pupils' reading and <br> computer literacy <br> To strengthen group and pairs <br> cooperation <br> Science studies |
| Subject: | $9-10$ years old pupils, $4^{\text {th }}$ grade |
| The group of age: | and |


| Activity | Description | Time |
| :---: | :--- | :---: |
| Warming up - <br> Brainstorming <br>  <br>  <br> Pupils write all their ideas that are connected to the <br> topic animals on the black board, teacher doesn't them, nothing is wrong. | 5 min. |  |
| Work with text | Pupils are divided in the groups of 4 and given a set of <br> cut pieces of worksheet, pupils read them and try to <br> order them to the correct titles according to their <br> knowledge. After finishing the teacher corrects together <br> with all the groups. | 15 min. |
| Posters <br> creation | Pupils in groups are divided into pairs and with using of <br> iPads in application PicCollage (multiplatform app) <br> create a poster for one group of animals (birds, fish, <br> reptiles,...) according to the teacher's instruction. They | 20 min. |
| use pictures from the internet and add the text, these |  |  |
| posters will be printed instead of usual notes from the |  |  |
| lessons. At the end of the work pupils save their posters |  |  |$\quad$.


|  | to the class file in school Dropbox account. |  |
| :--- | :--- | :--- |
| Evaluation | At the end of the lesson pupils debate in their groups 5 min. <br> about what they like and what could be improved in the <br> next lesson and give feedback to the teacher too via the <br> group speaker. |  |
| Special task for <br> talented pupils pupils are very quick, they can use the cut |  |  |
|  | worksheet again and try to classify the groups of <br> animals according to the food, body temperature, <br> breathing and reproduction |  |

## Amphibians

- Vertebrates - quadrupeds - are able to live on the land and in the water.
- They breathe oxygen from air on the land.
- They develop from the eggs in the water, where they also live during the first phase of life. They live mainly on insects.
- They do not have a constant body temperature.
- Frogs, newts or salamanders belong into this group.


## Birds

- They are bipedal, warm-blooded vertebrates.
- The skeleton has light, hollow bones.
- The forelegs have evolved into wings that allow them to fly.
- The body is covered with feathers.
- They have a beak on their heads.
- They breed eggs.
- Their food includes plants, seeds, insects, fish, etc.


## Reptiles

- They are vertebrates, the body is covered with scales or shields.
- They are cold-blooded animals and they do not have a constant body temperature.
- They breed eggs but some reptiles are vivaparous.
- Reptiles are for example turtles, lizards, snakes, crocodiles, etc.
- Fish
- They are aquatic vertebrates.
- They live in freshwater and saltwater (freshwater, marine, migratory).
- 

They are adapted to life in the water, they breathe the gills, some have other auxiliary breathing organs.

- A special sensory organ is the side line on the fishs' side that is important for orientation.
- Reproduction is called spawning.
- They may be predatory, herbivorous, omnivorous, parasitic.


## Mammals

- Class of vertebrates, their offspring (after birth) is breastfed.
- They are warm-blooded animals, reaching the highest levels of the nervous system.
- Their body is covered with fur, some animals have spikes, spines, thorns.
- These include beasts, rodents, primates, insectivores, cetaceans, etc.

Invertebrates

- Invertebrate animals include all those who do not have the spine.
- They occur in all types of environment.
- Insects, spiders, crustaceans, molluscs, etc. belong in this group.
- A group of animals that can be harmful and useful.


## SLOVENIA

## ENGLISH AS THE FIRST FOREIGN LANGUAGE

## SCHOOL SUBJECT: ENGLISH AS THE FIRST FOREIGN LANGUAGE

UNIT: 5 PLACES
SECTION TITLE: 5B OUR HOUSE
CLASS TITLE: Reading and speaking

## LEARNING GOALS:

- Students name and describe rooms in a flat and it's furniture.
- Students say where something is located in a room.
- Students know how to use the prepositions of place.


## LANGUAGE AND VOCABULARY:

- there is / there are ...
- prepositions of place
- furniture
- rooms and furniture in a house


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- prepositions of place
- furniture
- rooms and furniture in a house

Introduction: Teacher asks the students if they are wearing different socks today ori $f$ they have seen somebody wearing different shoes or socks. Students try to deduce what day it is (21st March - World Down Syndrome Day) and the connection between socks / shoes that don't match and the disorder.

A game for revising furniture vocabulary - each row in the class gets one room in the house (kitchen, living room and bathroom). Students look at the pictures of the rooms projected on the board and write as many items of furniture as they can. They have got 60 seconds. Students check their solutions by writing them on the board.
Motivational activity: Students get a worksheet with a plan of a flat. They guess what it is.

Reading comprehension SB 55/7: Students listen to the teacher reading the text and write the names of the rooms in the worksheet in blue. (*Učenci Romi in učenka z DSP na izročkih dobijo tudi slovenska poimenovanja). They check their solutions in pairs first, then on the board.

They continue working in pairs - now they read the text themselves and draw the furniture in individual rooms in black. Students check their solutions on the board teacher draw the furniture on the board by calling different students to tell her what is in a room.
Speaking SB 55/8: Students work individually and draw 6 extra items in the flat plan by using a red pen. When they finish students put their hands behind their head so that the teacher can see their progress. In pairs, they describe the locations of the extra items and draw them with a green pen- one student says the location of the item (example: There is a clock on the table in the living room), the other draws the item into their own flat plan.
Ending the lesson: Students say what was interesting, difficult, fun, new ... in today's lesson.

## After the lesson ...

Note: There are three Roma students, two students with certain disabilities and an immigrant student in the class, so the lesson will be differentiated accordingly.

There will be one assistant for the Roma students and three more teachers (two headmistresses and one English teacher) as this is an observed lesson.

## DAILY LESSON PLAN

Class: $4^{\text {th }}$ class (age: 10 years)
Subject: ART

| Unit: | Extra-terrestrial flower <br> (drawing with charcoal) |
| :--- | :--- |
| Teaching methods: | Group work, frontal; practical work, art technique <br> explanation |
| Sesson objectives: | Students will: <br> and strengthening their individual artistic expression, <br> - develop expressive abilities at surface designing the sense of lines arrangement on the <br> surface <br> 0 <br> - develop motoric abilities and the feeling of working <br> with different materials and accessories for expressing <br> themselves on the surface |
|  | $0 \quad$ - create drawing by following the instructions <br> - building up the abilities of teamwork and tolerance |
| Teaching accessories: | A sheet of drawing paper, charcoal |
| Across the curriculum linkage: | Science, Slovenian |

## PROCEDURE

## Introduction:

I have a conversation with students about life in the Universe. I remember them of the book
Drejček and three Aliens by a Slovene author Vid Pecjak. I asked them how do, according to their imagination, look flowers that grow on some other planet. Pupils emerge themselves into the world of imagination and give suggestions, which they put in words. When one pupil describes the outlook of the flower, the others close their eyes and try to imagine, how the flower would look like.

## Main part

Announcement of the aim: You will make together one drawing in the technics drawing. You will use charcoal.

- Explanation of art technique: a big piece of paper (the size of four sheets of drawing paper) divide into so many parts as there is students in a group (4-5). This time you will start drawing from outer margin of the paper to the centre of the paper, where the flower will merge into a whole. Each student starts drawing from their side of the paper and the drawing will merge into a whole in the centre.
- Work organization: preparation of material and requisites.
- Independent work of pupils (Pupils are not allowed to talk before and during the work, so they are not allowed to use verbal communication. The only communication they can use is non-verbal.


## MUSIC FOR DIFFERENT OCCASIONS

Class: 6. b
School subject: Music

- Conclusion
- Exhibition of drawings
- Making the rules for valuation:
- How original is the solution of this art task
- How much full is a sheet of paper, the balance
- How aesthetic the drawing is
- How technical consistent is the drawing, with respect to pupil abilities at this age.



## LESSON PLAN

## Introduction, warm up

Students review the elements of vocal and instrumental music. They introduce the features of folk music, customs and folk instruments. Ponovijo elemente vokalne in
ištrumentalne glasbe. Predstavijo značilnosti ljudske glasbe, običaje in ljudska glasbila. Accompanied by the piano they sing the song Na planincah sončece sije.

## Main part

After the singing they get the lyrics of the song Na vrtu mi javor, which is a folk song from Bela krajina. They copy the lyrics into their notebooks correctly and accurately. Some of them read the lyrics aloud, then the whole group reads the lyrics aloud. They get the rythmical and melodical instruments of Orf instruments. I write the melody on the board. The main notes are: C, F and G. The students write the melody into their notebooks and play the melody on the instruments. They improvise rythmical forms. They are attentive on the speed of the composition.
The student, who plays the violin, plays the melody. The students repeat after her and sing it. While singing, they play the rythmical instruments. They play quietly.
A group of students play the melodical Orff instruments, consisted of the bells and the xylophones

## Conclusion

We end up the lesson with singing accompanied by the playing of the violin, the piano and Orff instruments.
With playing the instruments and singing along they develope concentration, focus and attention.
They learn the song Na vrtu mi javor zeleni by heart for their homework.

## THEME: MY FAVOURITE ANIMAL

## Class: 2

Teaching accessories: visuals, internet connection, assessment sheet
Teaching methods: conversation, narration. Explanation, listening, work with text, quiz
Teaching techniques: frontal, individual, group

## Unit: My favourite animal

- Lesson objectives
- Students can form meaningful, co-dependent and understandable texts
- Students have an oral presentation with the topic prepared in advance and they develop public speaking skills.
- Students are familiar with the principles of successful public presentation and critically value their presentation and the presentations of their schoolmates and they suggest improvements.
- They develop focused listening skills


## - They develop memory skills

- They improve their teamwork skills


## PROCEDURE:

## 1. Warm up ( 10 min )

Game 1: Students listen to the voices of domestic animals and guess, which animals they hear. They name the sound of the animals (cock-a-doodle-doo, gabble, bleat, bray, neigh ...)
You tube: Domestic animals

## Game 2: Didactic game - Guess who

The game is carried out in four groups.
An individual student gets the card with the picture of one domestic animal. The student starts to describe the animal, but other students must not see his/her card. The student describes the animal, until other students guess, which animal is on the card. The game is then continued by next student.
2. ORAL PRESENTATION (we assess 3 students - predicted time: 20 min .)

Oral presentation was announced a few days in advance and the teacher helped students with the preparation. The teacher tell the students that they will listen to three presentations and assess them with a descriptive grade (which the teacher projects on the power point).
The teacher emphasises that they should listen to all presentations carefully, because at the end there will be a quiz, which will show, how active their listening was and how much information they memorised.
The students calm down for active listening.
Three students perform a presentation with the topic My favourite animal. The whole class listens carefully to all three students and the class assesses them according to the assessment criteria. The students and the teacher give compliments to everything that was good in the presentation. Then they point out to weak parts of the presentation and give suggestions for improvement.
The student who makes the presentation has an opportunity to give his/her opinion about the performance and expresses his/her feelings before, during and after the presentation.
Healthy minute (dance to the music video)
3. Quiz (10-15 minutes)

After finished presentations, we check students' active listening and memory skills with a quiz.

The teacher puts students into three groups. Students answer to questions and collect points, which they get for correct answers. The time limit for consultation in a group is 5 seconds. Each time a different student in a group answers a question. The winning group gets a recognition award.

The students, who had presentations, are a jury, which judges the correctness of answers.

If there is time left, students evaluate the activities in the lesson.
How did you feel during the lesson?
What did you learn in this lesson?

# INSTRUCTIONS FOR THE PREPARATION OF ORAL PRESENTATION "MY 

## FAVOURITE ANIMAL"

## Assessment date:

In your presentation, you will independently talk about your favourite animal. The presentation should be approximately 3-minutes long.

## 1. Structure of the text

The text should have an introduction, a main part and a conclusion.

- In the introduction explain, which animal you will present and why have you chosen this animal.
- In the main part talk about this animal. You can describe its outlook, characteristics, food, reproduction, its habits, your relationship to this animal, the care for it. You can describe an interesting experience with this animal and your feelings about it.
- In the conclusion you can tell, why this is your favourite animal. However, you can use your own idea about the conclusion of your presentation.


## 2. How you prepare yourself for the presentation

- Choose the animal that you will talk about.
- Gather as much information about is as possible. You can use books, magazines, internet and your experiences.
- Write a story/description, which you enrich with interesting ideas. Be careful that you do not repeat your thoughts and words. Your presentation will be even more interesting, if you show the picture of the animal or make a poster about it.
- Check your text carefully and correct mistakes. At home read several times through your text and have someone to listen to you. It is not necessary that you know the text by heart. During the presentation you can help yourself with a mind map, focal points or your poster.


## 3. Performance

Speak as correctly, loudly and clearly as possible. Be careful that you do not speek too fast. Look at your listeners.

## At the assessment of presentation, the following things will be observed:

- Introduction of the content: A student tells the title.
- Structure of the text: The text has an introduction, a main part, a conclusion.
- Content: The content is meaningful, follows the instructions, has the appropriate length, is rich in ideas, creative, interesting, logically ordered.
- Expression skills: A student uses standard language, appropriately rich vocabulary, complex sentences ...
- Performance: A student speaks fluently, independently, with appropriate speed, loudly and clearly.

A student makes an eye contact with listeners.
I wish you lots of success.
Your teacher

## ASSESSMENT SHEET <br> ORAL PERFORMANCE "MY FAVOURITE ANIMAL"

STUDENT: $\qquad$
DATE: $\qquad$

## 1. CONTENT INTRODUCTION:

- A student announces, what the presentation will be about.
- A student does not announce the content.

2. STRUCTURE OF THE TEXT:

- The text has an introduction, main part and conclusion1 t
- The text is missing one part of the whole structure.

3. CONTENT

- Content is meaningful, rich and in logical order.
- Content is meaningful, appropriate, in logical order.
- Content is not fully developed, lacks order, thoughts repeat themselves
$0 \quad$ The length of the presentation is within the assigned time limits (2, 5 do 3 minute) 1t
- The presentation is shorter than the assigned time.

4. LANGUAGE

- A student uses standard language.
- A student uses standard language with the elements of colloquial language 1 t

| 0 | A student uses colloquial language | $0,5 \mathrm{t}$ |
| :--- | :--- | ---: |
|  |  |  |
| 5. | EXPRESSION |  |
| 0 | Sentences are clearly structured, occasionally complex, expression | is skilful (no |
| repetition of the same expressions, the usage of synonyms, adjectives) | 2 t |  |
|  | Sentences are mostly short, simple, occasionally repetitive. | 1 t |
| 0 | Sentences are occasionally poorly structured, repetition is frequent. | $0-0,5 \mathrm{t}$ |
| 6. | PERFORMANCE |  |
|  | A student speaks fluently, independently. | 2 t |
| 0 | A student helps himself/herself with a written text. | 1 t |
| 0 | A student mostly reads the written text. | 0 t |
| 0 | A student speaks quickly, loudly and clearly.. | 1 t |
| 0 | A student speaks too fast or makes too long pauses, speaks unclearly. | $0-0,5 \mathrm{t}$ |
| 0 | A student makes an eye-contact with listeners. | 1 t |
| 0 | A student makes an eye-contact with listeners occasionally. | $0,5 \mathrm{t}$ |
|  | A student makes no eye-contact.. | 0 t |
| TOTAL POINTS |  |  |



COLOUR, HOW MUCH POINTS YOU HAVE COLLECTED.

POLAND

## EARLY SCHOOL EDUCATION - SECOND GRADE

Topic: Adding and subtracting within 30.

## Objectives:

- developing adding and subtracting skills within 30
- developing observation skills and fair-play rules
- developing listening and analysing skills
- developing logical thinking
- stimulating and cultivating the desire to figure out the problem

Methods: Hajny game-based learning
Form of work: individual, group work
Materials: bus shaped box, riddles, the stepping mat

## Procedures:

1. An activity called THE BUS - we arrange 4 bus stops in the classroom there is one student standing at each of them. Teacher chooses the bus driver. Teacher puts man-like toys (e.g 30 if the adding and subtracting is meant to be within 30) into the bus shaped box. Students who stand at the bus stops approach the teacher and take different amount of man-like toys from the bus (the bus must be empty!) then they return to their bus stops. The bus driver departures. He stops at every bus stop. The passengers (man-like toys that are thrown into or taken out of the box) get on or off the bus. While throwing the man-like toys into the box the student says: 'the first passenger gets into the bus, and the next one, and another one.... After stopping at every bus stop, the bus driver finishes his route. The rest of the students have to count how many passengers are left in the bus. Each student
writes the result on the piece of paper. When the teacher asks 'How many passengers are left in the bus?', they rise their hands along with the result.
2. THE STEPPING - a maths activity based on


The Stepping Mat the Stepping Mat. Students draw maths riddle e.g 'go 2 steps forward, 6 steps forward, one step backward'.The student performs the action on the stepping mat- in that way the kid may check the result of adding and subtracting. Students may first count together and check the correct solution only at the end. They may also write it down individually in their notebooks. Next, the students write the riddles on the board in the form of calculation (e.g 2+6-1=7).

## Evaluation:

- observing students during the lesson
- keeping records of the kids' progress and activities in the 'observation notebook'
*The lesson was based on Hejny method which is a non-traditional way of teaching mathematics. The method was introduced as an innovation to our early-school education as a result of participating in Effective Schools Project, co-financed by the European Union from the European Regional Development Fund and the state budget.

For more information visit the website https://www.h-mat.cz/en/principles


GRADE 5 - LESSON PLAN TOPIC: AREA OF POLYGONS - REVISION

## Objectives:

Students will:

- know the formula for calculating the area of polygons,
- use the formula for finding the area of polygons,
- use the area units,
- draw polygons of a given area,
- calculate rational numbers,
- work in group


## Materials:

- cards with polygons drawing (triangle, rectangle, square, rhomboid,parallelogram, rhomb, trapezoid)
- cards with the area formula for polygons,
- drawing pad,
- bristol board,
- crayons,
- interactive whiteboard,
- online maths teaching platform for fifth grade students - MATLANDIA 5

Active working methods: brain storming, discussion, poster
Working form: group work

## PROCEDURES

- Organizing activities. Presenting the topic and aims of the lesson. Dividing students into groups of four. The teacher reminds of the rules students have to obey working in groups.
- The teacher hands out the paper and two types of worksheets - the drawings of the polygons and the area formula for polygons. The students have to match the area formula with the given figure (stick the workingsheets to the drawing pad). The students share their work. After finishing, the groups exchange their work and check if it's correct. It's time for short disscussion.
- Teacher hands out the bristol and asks them to draw a poster using the polygons. The teacher ensures the groupwork continues properly. At the end all the posters are exhibited.
- Teacher divides the students into groups of two.
- The groups solve the math problem on the interactive board - online maths teaching platform for fifth grade students - MATLANDIA 5 (https://matlandia.gwo.pl/) or http://www.matzoo.pl/klasa5. The groups use the area formula for polygons, the calculations are written on the board. All the groups write points for the correctly done problem. Students add the points.


## Evaluation

1) Teacher evaluates the students' work in group.
2) Students sum up the effects of their work:

- I revised during the lesson $\qquad$
- I understood that $\qquad$
- Mostly I liked ......


## SLOVAKIA

## English Lesson

Subject: English
Topic: Family
Class: 4 (3rd. year of learning English), primary school
Teching methods: frontal repeating, experience method, working with an interactive board, presentation of projects, playway to English-theatre performance, singing songs

## Teaching aids:

- interactive board,
- CD player,
- costumes for the story Snow White,
- Günter Gerngross, Herbert Puchta: Playway to English 4, second edition, Cambridge University Press, ISBN 978-0-521-13139-1 (Pupil's book, Activity book and CD\&DVD - computer program for working with interactive board),
- projects that students have prepared on the previous lessons

Educational goal: students learn to use family vocabulary and expressions in everyday situations using present simple and present continuous tense

## Structure of the lesson

A topic of the English lesson is 'the Family'. The lesson is focused mainly to develop speaking ability of students, especially family vocabulary plus grammar - present simple and present continuous.

## Motivational phase:

At the beginning children repeat previous knowledge of English - briefly to remind vocabulary in their mind. They should translate to English family words like mum, dad, grandma, grandpa, aunt, uncle, sister brother, cousin, niece, nephew etc. (see Pupil's book, pg 77-Unit 4 Family and Friends). The teacher corrects student's pronuncation if necessary
Then students work with Exercise 1 on the page 22 - Activity book (Read and complete) and Exercise 2 (Read the text in 1, write the answers). Students' task is to identify Family members and answer the questions (Who is Ryan's brother? Tom). In this lesson we build on our knowledge from previous lessons.
After completing these exercises students are going to sing a song 'Friends' (see page 28 in Pupil's book, CD).

## Fixative phase:

The middle part of the lesson is focused on the story -'Snow White'. The best way to study English is to act as a real Englishman that's why students act this story as theatre performance. This method is very attractive and effective, because it connects two activities - speaking and playing. Students are happy and motivated to work.
The teacher divides the roles of Snow White, the queen, the butler, the butcher, the mirror, kids, policemen and the speaker to students. Children play the scene 'Snow White' due to the text in Pupil's book (pg 26-28). They wear special costumes like the characters in the story and play their roles.

Then the class work with the interactive board - with programme 'Playway to English 4'- part Family. Students can see pictures of family vocabulary and story 'Snow White', they can hear a pronunciation of these words and sentences and they work with the programme - they solve each task. This method is considered as helpful and modern one.

The last students' task is to present their family projects. They have prepared them few lessons before and put them on the special board in the class. They could read them and watched photos during a break time, not only during English lesson. This method is focused on the improvement of writing and speaking skills. By this method students can also improve their relationships between themselves, because they know each other better.

## Evaluation and self assessment:

At the end of the lesson students conclude the quality of the lesson from their point of view. They evaluate the activities and personal progress in this lesson. Teacher asks them what they like and what they would change on the lesson. It's important and helpful for them and for the teacher too to support positive and eliminate negative factors during education.

## HISTORY LESSON

Subject: History
Class: 4th., Primary school
Topic: The Indians (Mayans, Incas, Aztecs) - revision lesson
Teaching methods: motivational interview, frontal experience method, group work

## Teaching aids:

- books and articles about Indians,
- illustrations,
- props to create an Indian camp - tent, clothes, decorations, tools, food...

Educational goal: The student can tell the basic information about Indians, can answer the teacher's questions of this topic using the suitable props to present a particular Indian culture. They also develope their presentation skills.

## The structure of the lesson

This is a revision lesson. On previous lessons students read the texts about Indians. They used information from articles and books. They learned about the way of life, about their typical and common features. Together with their teacher they made Indian decorations, prepared costumes and props to create Indian camp.

The students' task on this lesson is to present a particular Indian culture (tribe) verbally and using suitable props. Students have prepared their projects on previous lessons. They could choose whether to work in groups or independently.

## Motivational phase:

The lessons begins with Indians greetings, both the teacher and the pupils sit around „the fire" next to Indian tent. The teacher continuous with the verbal repeating of knowledge from the previous lessons on this topic. The teacher gives basic question to provoke students' interest and restore previous knowledge of pupils (Who are the Indians? Which continent do they live? Which tribes do we know? What tasks did men and women have in these tribes?...). The teacher checks the correctness of the answers.

## Fixative phase:

Pupils gradually (individually or in group) present the Indian tribe they have choosen. They explain why they did choose it and how it did interest them. They wear a typical clothes of the particular tribe, decorations, hairstyle. They offer food which they have prepared to other classmates and explain why this food is typical for their tribe. They also explain the lifestyle of the tribe and tools they used. The students answer the questions of classmates and teacher. After responding all the questions and ending the presentation, another group or pupil continuous.
After all the students present their projects, they smoke a symbolic pipe of peace and dance a simple Indian dance together with the teacher at the end of the lesson. Music can be pre-prepared or they can dance to the rhytm of the drum on which selected pupil plays.

## Evaluation and self assessment:

At the end of the lesson everybody sits around the fire and gradually tells the opinion of the Indian lesson. Together students evaluate each presentation and choose the best one. The author of the presentation becomes the leader of the tribe - the whole class and receives the leader's headband that the pupils made on previous lessons.

## Study material: Basic informations about the Indians

The Indians are natives of America and they are Asian mongoloid origin. The name of Indians came into existence because of the Spanish word "indios" (inhabitant of India) by mistake and spread after the discovery of America by Spanish who believed that they reached India. This name 'the Indians' was so used by everybody that the correct name Amerindones has not yet taken place in scientific literature.

However, the independent science department was created - the American Studies or Indian Studies.

The first inhabitants came to America approximately 35000 BC . They settled in the north and south of America and adapted to different enviroment conditions. The nomadic tribes hunted wild animals, they did fishing and they lived in big leather tents - teepee, which they carried by themselves. Other tribs grew field crops and prefered settled life. They built houses made of special unburnt bricks - puebla.
Most tribes had so-called clan system. The clan is a part of the tribe. The mother genus dominated everywhere, which means that husband married into wife's clan. The wedding
 between a man and a woman of one clan was forbidden. Wedding was prepared by parents with agreement of wider family. The father who decided to marry his daughter to a man had to look after many things: husband's family and status and his ability to take care of the family. The man had to deserve his wife by performing a heroic act or adequate property.
Tasks were divided between men and women. Men hunted and did fishing because they cared of food, women built and arranged dwellings, prepared meal and made clothes. Their children helped them. The boys used to ride a horse, read tracks and they learnt how to fight in a battle. Girls helped their mothers with cooking, leather processing and clothes sewing.
Many celebrations and dances associated with them had a great importance in their lives. They celebrated all the important events in the tribe and on each occasion they had another special dance.
The most well-known Indian cultures

## Mayans:

- Their empire reached the top in the years 300-800 AD.
- Their empire existed at the territory of current Guatemala, Belize and port of Mexico.
- Hieroglyfic inscriptions (signs) on buildings show that Mayans had their own alphabet, which was decoded at the end of 20th century.
- They had a very precise mathematical system.

- They also had their own calendar - the year had 18 month and each month was 22 days long, there were 5 days at the end of the year for celebrations, they also knew a lead year.
- Their wealth was created by growing crops, especially maize - that they worshiped as God.
- Thanks to their wealth, they could build cities and develop art.


## Aztecs:

- They came to the territory of current Mexico in the first half of 14th. century.
- They settled on the shore of Lake Texcoco and founded the town Tenochtitlan which became the centre of the empire.
- They soon became rulers over all the tribes in the country.
- They were known for their cruel religion rituals in which they sacrificed people to their God (they believed he still needed fresh blood).
- The Aztecs traded a lot and used cocoa beans as money.



## Incas:

The Incas began to explore and conquer new territories and finally founded the best organized Latin American Empire that existed from 1200 until about 1530.

- Their empire existed at the territory of current states Peru, Bolivia, Ecuador, Chille.
- They worshiped many Gods, the highiest was the God of Sun - Inti. The ruler Inka was considered to be the child of this God of Sun, unlimited power was ascribed to him.

- They built a number of roads, but they didn't use wagons, instead of that they used to ride lamas or travel on foot around the country.

They used nodal letters.

- In the Incas society everyone had the right to own land an food, children drove awaz birds and helped to guard the crop.
- During religion celebrations they sacrificed small animals and food for the God of Sun to gain favour of the Gods and secure good crops.
- Golsmith's trade was at a high level. There were many famous Incas' treasures most of which were gained by the Spanish.


PORTUGAL
SUBJECT: PHYSICAL EDUCATION
CLASS: 5
Unit: Dance
Duration: 45minutes
Summary: Dance: - Choreography: chaining
Contents: Choreography of music- Chain
Objectives: Learn and perform the choreography of the music chain
Strategies:

- class (circle) and form pairs;
- form pairs, girl and boy;
- without music perform the steps;

- divide the music into 3 parts;
- perform the steps with music

Evaluation: formative
Resources: CD

## MUSIC AROUND THE WORLD

Class: 6th grade
Subject: Music Around the World
Teacher: Henrique Josй
Data: February 5, 2018
Unit: 2
Duration: 90 minutes.
Summary: Class integrated in the project Erasmus+ "Effective Communication - A
Successful Future Life.

## Objectives:

- Portugal in the context of world music;
- Strengthen and enhance cultural and musical identity in the era of globalization;
- Identifying and representing the D major scale on the musical score;

- Performing joint instrumental and choral practice.


## Strategies:

- Presentation and explanation of the diatonic scale of $D$ major;
- Presentation of notes F sharp and C Sharp;
- Musical auditions;
- Rhythmic and Melodic Sight-reading;
- Exercises of rhythmic and melodic imitation;
- Orff instrumental practice.


## Evaluation:

- Direct observation;
- Cognitive domain;
- Social-affective domain;
- Choral and instrumental practice.


## Resources:

- Orff instruments;
- Recorder;
- Electric Acoustic Classical guitar;
- Interactiv board;
- Interactive school book
- Campani guitar (traditional portuguese
- instrument of the Alentejo region)

AGRUPAMENTO DE ESCOLAS DE MONTEMOR-O-NOVO

| Year/Class: 8th | Subject: Math - |
| :--- | :--- |

## Unit: Isometry

| Duration: 90 min | Summary: Exploring the Slide <br> Reflection |
| :--- | :---: |

## Contents: Isometry: Slide Reflection

## Objectives:

Representing isometries.
Understanding the composition of isometries. Finding properties for Slide Reflexion

## Strategies:

Teacher presents the task.
Students solve the task with Geogebra.
Teacher helps with the difficulties and discuss some questions with the pairs. Students record their findings in the notebook.

Students save their work and send them to the class $8^{\circ} \mathrm{E}$ in the moodle platform.

| Evaluation: | Resources: <br> Teatcher computer Video projector |
| :--- | :--- |
| Watching children working Asking | Students tablets Software Geogebra |
| students in their place Analysing | Software Onenote |
| students work | Students Notebooks |



## AGRUPAMENTO DE ESCOLAS DE MONTEMOR-O-NOVO LESSON PLAN

## Year/Class: 8o

Subject: Chemistry

| Duration: 90 min | Summary: <br> Study of the factors that influence the <br> speed of chemical reactions |
| :--- | :--- |

Contents: Speed of chemical reactions

## Objectives:

Conclude by experimental activity what are the effects on the rate of chemical reactions, the concentration of the reactants, the temperature, the state of division of the solid reagent (s) and the presence of an appropriate catalyst.

Interpret the variation of the speed of the reactions based on the control of the factors that alter it.

## Strategies:

By carrying out a practical activity, students experimentally control the influence of temperature, concentration, state of division of the reactants and catalysts in the presence of a chemical reaction speed.

In the end they should draw conclusions about how each of the factors studied influences said speed.
Evaluation:

## Resources:

The students fill out a form with the Laboratory material, reagents (chalk, different observations made and the vinegar and hydrogen peroxide), conclusions they reached. This form is experimental script, discipline manual. counted in the summative evaluation of the students.

Answer the questions and record your observations in your daily notebook.
Evaluation concentration effect - reactants in a reaction speed
Material and reagents reagents listed:
Check if you have all the material

2 test tubes
Pasteur pipette
Chalk Vinegar (contains acetic acid)
Support test tubes
Splash bottle

## Experimental procedure

1. Using a Pasteur pipette, transfer vinegar to tube $A$ to about $1 / 2$ of its capacity.
2. In tube B put $1 / 4$ of vinegar and $1 / 4$ of water.
3. Put two small pieces of chalk with equal size into each the test tubes.

4. Compare and register in which tubes ( A or B ) the chemical reaction speed is higher.

## Questions

1. Indicates which tubes, $A$ or $B$, has a higher concentration of acetic acid (from vinegar).

## Justify your answer.

2. Identifies the test tube in which the chemical reaction occurred with the highest velocity.

## Conclusions

What was the difference in speed at the chemical reaction in the two test tubes?

- Vinegar can be used, for example, to clean decorative pieces in metal. Explain if you would prefer to use concentrated or diluted vinegar for this purpose. It justifies taking into account the results of this practical activity.


## Evaluation effect of temperature on reaction speed

## Material and reagents

Check if you have all the material / reagents listed:

- 2 test tubes
- Pasteur pipette Lamp
- Support test tubes
- Wooden spring

Chalk
Vinegar

## Experimental procedure

1. With a Pasteur pipette, transfer vinegar to tube $A$ and tube $B$ to about $1 / 3$ of its capacity.
2. Heat tube $B$, keeping the other at room temperature.
3. Joins two small pieces of chalk equal, one in each test tube, and watch.

4. Compare and register in which tubes (A or B) the chemical reaction speed is higher.

## Questions

1- From the following statements, select the only true one.
The system temperature is...
i) ... higher in tube $B$ than in tube $A$.
ii) ... higher in tube $A$ than in tube $B$.
iii) ... equal in the two test tubes.

2- From the following statements, select the only true one.
The mass of the solid reagent is ...
i) ... higher in tube $B$ than in tube $A$
ii) $\quad$... higher in tube $A$ than in tube $B$
iii) ... equal in the two test tubes.

## Conclusions

- What was the difference in speed chemical reaction in the two test tubes?
- Based on the results of this activity, explain the reason why the placing of food in the refrigerator reduces the speed of its decomposition.
Evaluation effect of the divided state of the reactants in a reaction speed


## Material and reagents

Check if you have all the material / reagents listed:

- 2 test tubes
- Pasteur pippete

Pestle

- Support test tubes
- Mortar

Chalk
Vinegar

## Experimental procedure

1. Using a Pasteur pipette, transfer vinegar to each of the test tubes to about $1 / 3$ of its capacity.
2. Broke the chalk stick in two equal parts.
3. In the mortar, using the pestle, grind one of the pieces of chalk until it is powdered.
4. Put the two pieces of chalk, with equal mass, one integer in tube $A$ and another one crushed in tube B .

5. 

Compare the velocity of reaction in the tubes A and B .

## Questions

1- Identify the test tube where the chemical reaction occurred with the highest velocity.

2- From the following options, choose the one that completes the phrase correctly.
The system temperature is ...
i) ... higher in tube $B$ than in tube $A$.
ii) ... higher in tube $A$ than in tube $B$.
iii) ... equal in the two test tubes.

3- From the following options, choose the one that completes the phrase correctly.

## The state of division of the reagents is ...

i) ... higher in tube $B$ than in tube $A$.
ii) ... higher in tube $A$ than in tube $B$.
iii) ... equal in the two test tubes.

## Conclusions

- What was the difference in speed of chemical reaction in the two test tubes?
- The following statements, indicate the true (V) and false (F).
i) The largest division of the reagents results in a larger contact surface.
ii) The largest division of the reagents results in a smaller contact surface.
iii) How much more finely divided a reagents, higher the speed with which it reacts.
iv) The state of division of the reactants has no influence on the speed of a reaction
i) Concentration of reagent solution.
ii) System temperature
iii) Presence of a catalyst
iv) Presence of an inhibitor.

3. $\quad$ Selects, from the following statements, the true $(\mathrm{V})$ and the false (F)
i) Hydrogen peroxide slowly decomposes to give gaseous oxygen.
ii) Catalase is a catalyst that increases the decomposition rate of hydrogen peroxide - presence of a catalyst.
iii) Catalase does not exist in the human organism.
iv) Catalase is an inhibitor.

## Material and reagents

Check if you have all the material / reagents listed:

| Pasteur pippete |  |
| :--- | :--- |
| 0 | hydrogen peroxide (aqueous solution of |
| hydrogen peroxide) |  |
| Support test tubes | Potato (contains catalase) |
| Experimental procedure |  |

1. Using the Pasteur pipette, transfer hydrogen peroxide to both test tubes up to $1 / 4$ of their capacity.
2. Cut a small amount of potato and place it in test tube A.
3. Register your observations.


## Questions

1- Explain what you observed.
2- From the following statements, select the only true one.

## The gas that has formed is the ..

i)
... oxygen.
ii) ... hydrogen.
iii) ... nitrogen.
iv) ... AIR DIOXIDE.

3- $\quad$ Selects, from the following statements, the true $(\mathrm{V})$ and the false $(\mathrm{F})$
i) ... The decomposition of hydrogen peroxide in test tube $B$ is so slow that no bubble formation is observed
ii) ... In test tube B there is no decomposition of hydrogen peroxide.
iii) ... The rate of decomposition of hydrogen peroxide is higher in test tube
A.
iv) ... The rate of decomposition of hydrogen peroxide is higher in test tube
B.

## Conclusions

What was the chemical reaction observed?
$0 \quad$ Selects, from the following statements, the true $(V)$ and the false (F)
i) A catalyst increases the speed of a chemical reaction.
ii) An inhibitor increases the speed of a chemical reaction.
iii) The presence of inhibitors, for example, in food reduces the rate at which it decomposes.
iv)

The catalysts are consumed in chemical reactions, it is necessary to replace them in the system.

## Schools Involved

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