ERASMUS+

Strategic Partnerships for School

Education

GE-STEAM

Gender Equality in Science, Technology, Engineering, Art and Mathematics

GE-STEAM

IO3 - Introducing ART in STEM

2020-1-RO01-KA201-080189

Project Identification

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Project's Partners

Contents

MODULE I

CHAPTER ONE

Introducing ART in STEM – Guidelines for using PROJECT-BASED LEARNING /PBL/ for teachers

1. Theoretical notes

When we talk about the freedom in the relationship between teacher and student, and its pedagogical dimensions, we must comment on the PROJECT-BASED LEARNING / PBL /.

PBL frees from their classic roles both sides in the educational process - teacher and student. The teacher from a user of formally structured knowledge, always ready to fill clichés with decisions, becomes a capacity that directly poses problems to solve.

PBL makes the monotonous lecturer grow into a consultant who, with the finesse of unobtrusive knowledge, gives direction, marks the route and shares the rules with his students.

He is a partner, navigator, manages and facilitates the learning process by "returning" students on the right track, when needed, because they are no longer just listeners, but those who search, shape, structure, summarize, share and present.

When students reach another educational product with the development of another project, without even realizing it, they are already planning and managing their time, working together while making decisions and being critical. The ability to put yourself in the other person's shoes, to listen to and evaluate him, and

then to be able to evaluate yourself, balances the stress levels of the test and stimulates creativity.

The project-based learning model mobilizes learning because it forces classical teaching to give way to the wealth of information resources found by children, stimulating their personal expression. This model energizes cooperation and tolerance, ensures the expansion of the scope of individual knowledge, giving a chance to leaders who have not yet discovered self-confidence.

The theoretical basis of project-based learning is constructivism.

In this model, the teacher must create the right conditions so that the student can build his learning. Some of the main ideas of this model are the following:

- Meaningful learning - the student must believe that what he learns can serve him in real life, and the teacher must adapt the learning objectives based on the characteristics of his students.

- Learning to discover - Teachers do not have to answer every question asked, but they must provide students with the necessary tools to discover them themselves.

- Learning in steps - learning should be gradual, so that students always have a challenge, but not so great as to demotivate them or prevent them from progressing.

- Imitation of a model - students follow the model of a person who has already mastered what they want to learn - behavior, knowledge, profession and more.

In the presented pedagogical model the emphasis is on the training in competencies. The teacher must determine what skills, knowledge and attitudes are needed for the development of quality life, overcoming stereotypes about gender inequality. https://bg.warbletoncouncil.org/modelos-pedagogicos-16237#menu-4

The stages of training, organized according to the ideas of **constructivism**, are:

1. Stimulation of interest - choosing a topic that causes conditions for the formation of conflicting opinions in the classroom;

2. Formation of groups - the school class is divided into various groups, regardless of the characteristics - abilities, gender, ethnic origin, etc.;

3. Development of relations in groups - the teacher stimulates communication within the groups based on common features and shared views between participants;

4. The choice of topic is the leading principle as well as the interpretation of the leading topic - the topic should be divided into small parts as each group has its own subtopic for proof and validation of the work of each group is necessary and important to achieve the leading theme;

5. Further division of the given topic - the subtopic is divided into even smaller segments so that each member of the group has his own task for which he is responsible;

6. Development of the sub-topic - students collect and develop material for their own tasks independently and are encouraged to help each other out;

7. The members of the group discuss the implementation of the independent tasks on their sub-topic;

8. The members of the group prepare a joint report;

9. Report of the group from the results of the task in front of the class.
http://www.psixolozi.info/2019/02/pedagogika-inovacii.html

The beginning of the work on a project and the presentation of the final result are the two key points in PBL. At the beginning we challenge the students with the problem they have to find a solution to, and at the end they share their findings in the form of a presentation, speech, video, website or more.

In the classroom dominated by PBL, students train their thinking during missions that improve their knowledge over a particular subject, or preferably several, skillfully combined through interdisciplinary links. Thus, the projects turn out to be large-scale tasks of an interdisciplinary nature.

The stages of project-based training are:

1. Organizational - specify the method of work, team building and the ultimate goal.

2. Operational - the main activities are performed observations, collection and selection of materials, work on the final product.

3. Productive - finalizing the work on the final product / printing the newspaper (if it is an online version), presenting the children's newspaper to students from other classes, parents and friends.

Working on a project allows for improvisations related to the learning environment, and at one point it can be the library or the school yard, at another it can be the park, the museum or the city art gallery.

The project work skillfully interweaves the practical activity of students in their theoretical knowledge, connects the educational process with their life and cognitive experience, socializes children, gradually makes them acquire skills and competencies inherent in the modern personality.

Students need to do much more than remember any information, they need to use a higher order of thinking skills, learn to work as a team and contribute with their efforts to its success. They need to listen to others and express their own ideas clearly, be able to read different materials, write, draw or otherwise express themselves in many ways and make effective presentations.

This leads to the formation of several groups of skills:

- reflective skills: to make sense of the problem for which there is a lack of knowledge; to answer the question: What do I need to learn to solve the problem?;

- research skills: for independent search of knowledge from different fields; to independently find specific information in the information field; to find several options to solve the problem; to raise hypotheses; to establish causal links;

- teamwork skills: for team planning; for interaction with each partner; for mutual assistance in the group in solving joint tasks; for business partnership communication; to find the mistakes of their partners in the work process and eliminate them;

- technological skills: for designing processes and / or products; for implementation of previously mastered technological operations; for proper use of tools and devices; to reach the set level of quality; to understand the properties of materials; to ensure personal safety and rational organization of the workplace;

- management skills: for planning activities, time and resources; to make decisions and predict their consequences; to analyze their own activities.

- communication skills: to ask questions; for participation in dialogue; for discussion; to defend one's own position and point of view; to make reasonable compromises;

- presentation skills: for giving a public speech; artistic skills; for the use of visual aids in public presentations; to formulate answers to unplanned (unexpected) questions, etc. http://www.bie.org; http://ytotseva.blogspot.com/2017/02/blog-post.html

The preparation and implementation of project work is realized in the following methodological model, which contains the most important content and organizational components of didactic argumentation:

• The topic of the project is related to the objectives of the training and the learning content, but in its development students have much more freedom and choice. The topic must be real, authentic, significant.

• Purpose and tasks of the project.

• Link to the curriculum.

• Information security.

• Organizational aspects: duration of training; formation and facilitation of the work of the teams.

• Activities necessary for the implementation of the project.

• Forms for presenting the project - exhibitions, posters, panels, files, products; small books or just texts; sketches, role-plays and situations;

• organizing and conducting competitions;

• Evaluation and discussion.

• Outcomes - The presentation should be public, in front of parents, teachers and other stakeholder representatives and bring positive experiences, satisfaction, interest in the results of the activity and others.

PBL is usually carried out by:

• Shared and applied in the classroom real life experience,

• Lessons for mastering soft skills - exchange of knowledge and ideas, teamwork, time management, presentation skills;

• Lessons for mastering hard skills - implementation "on paper" with the help of IT soft skills;

• Diversified communication - discussion, writing, visualization, presentation, etc.

• Theater in all its forms;

• Role games;

• Mixing genres for writing and reading - fairy tales, comics, etc.

PBL takes into account the individuality of students, with the fact that they learn differently, which naturally leads to a different approach in their assessment. If we assume that PBL is realized as a spectacle, then physics, chemistry, biology and other "difficult" to understand sciences generate the scenes that drive every action until the curtain falls, even after that.

https://www.monash.edu/stem-education/digital-classroom/steminars/exploring-problem-based-stem-teaching-and-learning-approaches

2. PROJECT-BASED LEARNING / PBL / in STEAM education

When talking about PBL in modern education, in recent years, more and more often commented and used are the STEM and STEAM approaches, which combine knowledge and methodologies that naturally and easily preserve children's curiosity and interest in otherwise complex matters for assimilation, learning and mastering.

Unlike traditional teaching models, teachers using the STEAM framework combine disciplines using synergies between the modeling process, mathematical and scientific content.

Thus, students can:

• think critically;

• analyze problems;

• be innovative in their approach to providing practical solutions;

• be more creative in solving problems using innovative and creative approaches.

That is why in our project we have chosen the STEAM approach to "face" the stereotypes between the genders imposed from the earliest, and later in school age.

Through the Association of Gender Equality and STEAM, which focuses on pre-school, primary and lower secondary education, the project addresses the under-representation of girls in STE (A) M (science, technology, engineering, arts and mathematics) that could be successful women with STEAM career in the future.

This project addresses gender equality in pre-school, primary and lower secondary education and aims to help reduce stereotypes by developing a series of innovative and interactive learning projects. They would contribute to the change in practical daily skills and social norms in terms of attitudes and stereotypes, especially in STEAM and in relation to teachers and young people.

2.1 Application of PBL in the Kindergarten and Pre-school

Caring for another new generation of children - technological, mobile and adaptable changes educational standards and requirements and quite logically starts STEAM-based learning in the first groups of kindergarten.

The fragile life experience that children gain in their first years is extremely important for their growth. Education and learning through games in a fun and safe environment stimulate children's thinking and curiosity, which are a solid prerequisite for success in decision-making in real-world situations.

Stimulated curiosity excites the imagination of children and naturally awakens the artist in them. There is no child who does not like to paint, paint, play with plasticine or clay. That is why there is nothing easier than provoking children to create in every possible way and so imperceptibly to "land" in the STEAM field.

Specifics of PBL:

- all children participate, and the teacher divides them equally boys and girls in several groups;

- the topic is a sequence of clearly defined elementary tasks, tailored to the age of the children;

- preliminary planning is a fact, goals are set, the expected results are defined;

- children are encouraged to ask questions using gender-sensitive language;

- the end result is known in advance - drawing, fairy tale, role in a puppet show;

- the analysis of the results is obligatory - the children should be encouraged for the job well done / emoticons, checklists can be used /;

- The children present what they have made to the public - children from other groups, parents and teachers.

Role-playing and imitation are extremely important for this age. They build children's social and emotional skills. A very useful method is the cooperative

game, in which the children learn the ability to alternate with others, to be responsible, to put themselves in the place of the other.

Imitation games enrich children's vocabulary, and to speed up the process you can do the following:

1. Enter a topic that includes the child's favorite toy.

2. If that toy happens to be a dog, for example, tell the child more about the different breeds of dogs.

3. Think of fairy tales, movies or books on the subject.

Constantly feed the child's imagination. Use all kinds of household items with which you can create a "the world of the children". Everything may help you - hats, blankets, chairs, magazines, cooking utensils, plates, cards, tickets, cards ...

2.2 Application of PBL in initial stage and Primary school

Modern primary pedagogy focuses on the expectations of the 21st century, which relies on energetic perception, purposeful thinking and imperceptible accumulation of knowledge, skills and active attitude to the world.

After going through kindergarten, young students already have experience of various joint activities, they can coordinate their actions and cooperate. Children develop self-control and self-esteem, insofar as they are already able to evaluate their actions and those of other children objectively enough. The teacher is still the dominant mentor, but he always has to listen to his students' suggestions.

Specifics of PBL:

- all students participate, and the teacher determines the balance of participation between boys and girls;

- preliminary planning is a fact, goals are set, the expected results are defined;

- the topic, structured as a sequence of clearly defined tasks, can be edited depending on the attitude and reactions of the children;

- students are encouraged to talk about their experiences using gender-sensitive language;

- the expected initial result is known in advance - drawing, fairy tale, role in a play or theatrical production, composition, comic;

- analysis of the results - obligatory praise for the most successful, adequate evaluation of the others; Here are the evaluation tables for each of the activities, with levels of evaluation of achievements;

- Students must present their achievements to the public - classmates, parents and teachers.

In this age group, diversified communication comes to the fore. Students share, discuss, write, visualize as much as they can. A suitable temptation for them is the theater in all its forms.

Role-playing games are now on a new level. Accepting another role helps young students to understand the power of language, and to feel its beauty. Through imitation and imagination, they get the opportunity to organize the event in a new way - the way they want it to happen. In the project-based classroom, students train their thinking skills through tasks of reading, writing and speaking. At this point, the mixing of writing and reading genres began. The improvisations related to the learning environment also begin, and at one point it can be the park, the museum, the library or the school yard.

2.3 Implementation of PBL in lower secondary education

Given the last two years of living in a pandemic, online learning is one of the fastest growing sectors in education. Due to the new opportunities they offer, technologies are increasingly entering the traditional learning environment through the so-called blended learning - a pedagogical approach that combines the efficiency and social effects of the traditional classroom with technologically advanced opportunities for active learning of virtual learning environments.

Specifics of PBL:

- all students participate, and the teacher decides how to balance between boys and girls;

- the topic, structured as a sequence of clearly defined tasks, can be edited by the students themselves;

- students are encouraged to share their impressions and life experiences using gender-sensitive language;

- the students are presented with the problem, they independently specify the goal, choose the necessary means to achieve the final results. The expected end results are determined together with the teacher;

- the initial results are known in advance - a fairy tale, a role in a play or theatrical production, comics, album;

- analysis of the results – always give praise for the most successful ones, as well as give adequate evaluation of the others;

- Students must present their achievements to the public - classmates, parents and teachers.

In this age group, the teacher is more of a student's advisor, supporter and partner. Research activity predisposes to discuss and solve problem situations, brainstorming. Variants are tested, the validity of the statements is checked, a comparison is made, a comparison is made, information is summarized, etc. At this stage, experts are involved for help - external lecturers, excursions are organized.

For students, an interesting form of self-reflection is keeping a project diary. In it, they note their pros and cons, which they have considered for themselves in the process of their own participation in the project.

The most significant difference from other age groups is the ability of students to work freely with a computer and to communicate on the Internet. This essential difference must be decisive in teachers' planning.

CHAPTER TWO

Introducing ART in STEM - Kit-hands on self-teach activities for children

Making the transition from traditional forms of teaching to VET requires significant prior training on the part of the teacher, but the benefits are immeasurable in terms of increasing student engagement and performance. Here are four steps you can take to begin the process of preparation for mediation.

1. Start planning backwards - this is how you prepare and plan project activities, starting from the end results, knowledge and skills that you want your students to learn through the implementation of the project.

2. Help your students formulate and ask questions correctly -

Once you find out what the students think about the topic, and after they have formulated their questions, start the most important activities for the project: go on a study trip, invite guests - experts, parents, friends, like-minded people to share their knowledge on the topic, provide all kinds of opportunities for their students to engage with the topic - quizzes, online games, interactive activities or experiments.

3. Help students understand how to think like experts - let individual students improve their knowledge on a specific aspect of the project and share it with others. The questions can be as specific as you allow them to be. Thus, students will find that not all of their questions have a ready answers. They will have to study different sources and synthesize information. In this way, they will form key skills and competencies of the 21st century, such as critical thinking and problem solving, flexibility and adaptability, productivity and accountability.

4. Help students publish and present what they have learned by inviting audiences - students from other classes who study similar topics, parents, administrators, like-minded people, as well as guest experts who helped in the beginning.

ALWAYS STICK TO THE KNOWLEDGE AND SKILLS OF STUDENTS ACCORDING TO THEIR AGE!

WHEN YOU START YOUR PREPARATION FOR A RELATED PROJECT, FOLLOW THESE STEPS:

1. Start with a group discussion to generate ideas and ways to solve the problem, which will fill your lesson with content. Think of a current problem that connects real life with the work of children on the project.

2. Plan with a clear idea of the desired end result. There are many ways in which students can show what they have learned - from drawing and telling a story, to participating in a puppet show. The overall planning of the project from now on should be in the service of preparing the children to reach this end result.

3. Divide the final product(s) into manageable phases or stages, marking each with the appropriate evaluation criteria. Within each of these criteria, identify the content and skills needed to complete a phase of the project. Connect each of them with the specific achievements of the students so that they can be assessed adequately.

4. Using the verbs from Bloom's taxonomy, evaluate the child's achievement by filling in the following columns:

Skills according to Bloom's taxonomy	Developing	Competent	Advanced
Knowledge – remembers/reproduces			
Understanding – compares/illustrates/explains			
Application - applies / discovers / demonstrates			
Analysis - identifies / distinguishes / detects errors			
Synthesis - creates / draws conclusions			
Evaluation - selects / evaluates / comments			

5. If you think it is necessary, add more columns that will lead to a clearer assessment of each child.

6. Create student feedback forms by taking your teacher's assessment form and against the standard that children have to meet, add proficiency fields as success criteria or "I can" statements. This makes the teacher's language close to them, which students can understand and realize what is expected of them, while helping them to think and evaluate themselves. For kindergarten, the teacher asks questions orally and the child answers with emoticons or words. Thus, self-esteem is tailored to each age. Regardless of the grade, the teacher should praise and encourage the child.

7. Use a project calendar, but first think about what daily training will look like within your project. For example, you can use Google Docs to create a spreadsheet that displays the next month on your calendar, combining all your daily lesson plans and resources in one place.

Let each lesson lead you to create a plan for the next lesson. In this way, the children's achievements will be leading and will suggest to the teachers how to create their next lesson plans.

MODULE II

PICTURES AND MATERIALS OF IMPLEMENTED LESSONS

CHAPTER ONE

PARTNER: FPS “Leonardo da Vinci”, BULGARIA

Project 1: Girls dress in pink, boys dress in blue

Number of pupils/children participating: 12

Age: 4-5 years old

Result:

Additional information: Children learn English from the age of 3. They have already studied the colors and some of the clothes and this will be used as an interdisciplinary link in learning the mother tongue / Bulgarian and foreign language / English. The lesson is focused on improving listening, speaking and developing fine motor skills. Students are introduced to a language related to the colors and types of clothing, shoes, accessories.

Project description: Children have the opportunity to work individually and in pairs, to analyze and use information through guiding questions. To this end, they will view a catalog of children's clothing, as well as a video showing a selection of clothes with mom and dad. They will get acquainted with sample combinations of clothes that are imposed by gender stereotypes, and then they will have the opportunity to combine colors and clothing in their own way.

The main goal of the project: To acquaint students with the terms of clothing and colors, as well as combining them using both languages. Emphasis is placed on three main goals: 1) Building skills for describing clothing; 2) Building skills for selection and aesthetic combination of clothes; 3) Building skills for conducting a thematic conversation in a real situation.

Preliminary preparation: Conversation with the children on the topic "How do people dress?": Teachers comment on the aesthetic side of clothing, right and wrong way of dressing, aesthetic combinations of colors and clothes.

Product: At the end of the lesson two products will be created:
1) Individual: Children color paper models of clothes to their liking. 2) Group: Role play "Dress me" - children dress paper dolls with paper clothes, working in pairs, and choose the already colored clothes as they like.

What other elements of a project-based lesson are used? Guiding questions; Impact and feedback; Specific content; 21st Century Skills; Public presentation of the product.

Benefit for students: Students will acquire knowledge and skills for free expression, to combine colors and shapes; tolerant attitude towards the other's clothing without gender segregation.

Project progress:

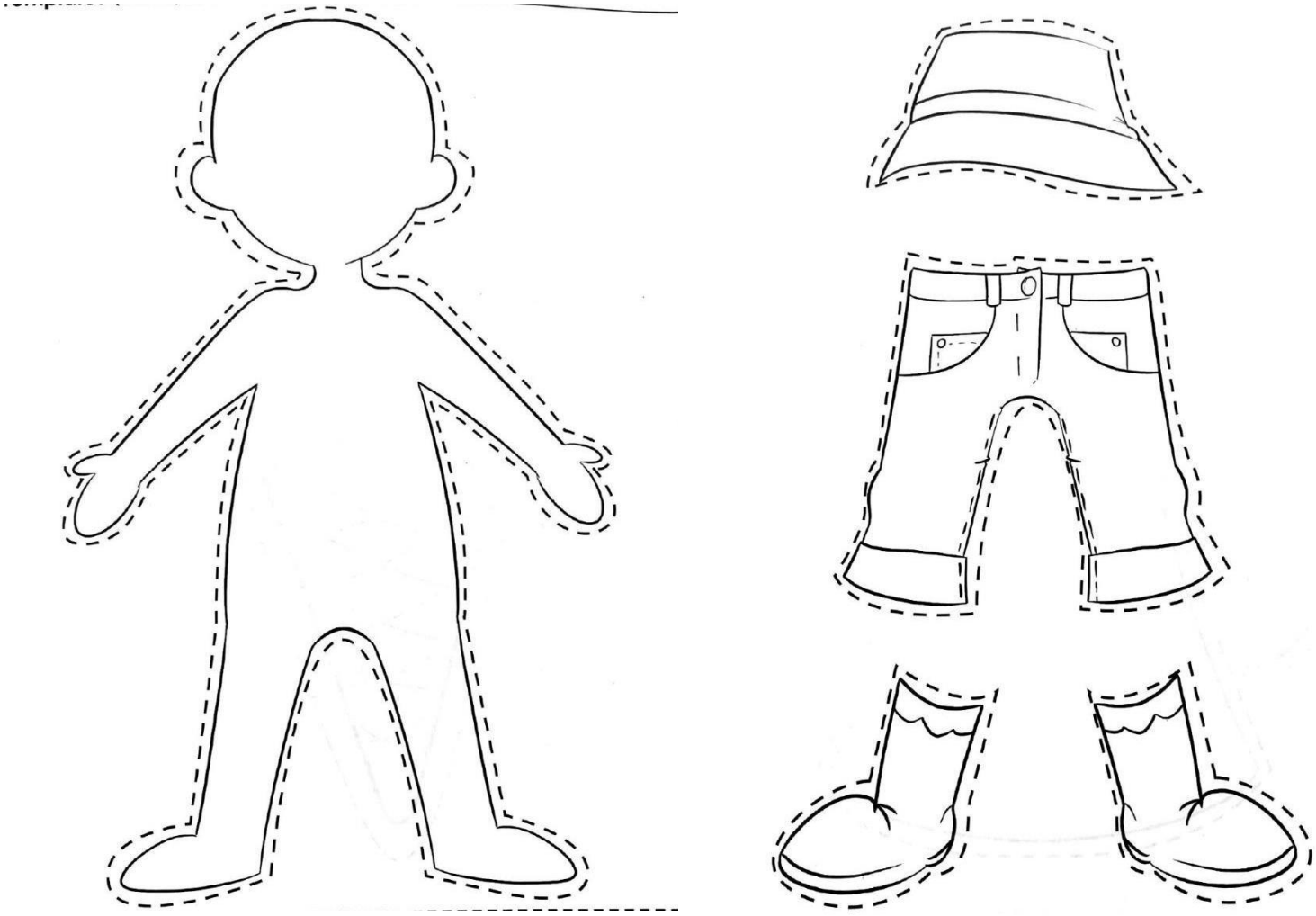
Day 1: - The children discuss in Bulgarian and English the colors and elements of the clothes. Independent task: Before coloring paper models of clothes, children watch a video dedicated to shopping for clothes with mom and dad.
Video link: https://www.youtube.com/watch?v=Q_EwuVHDb5U

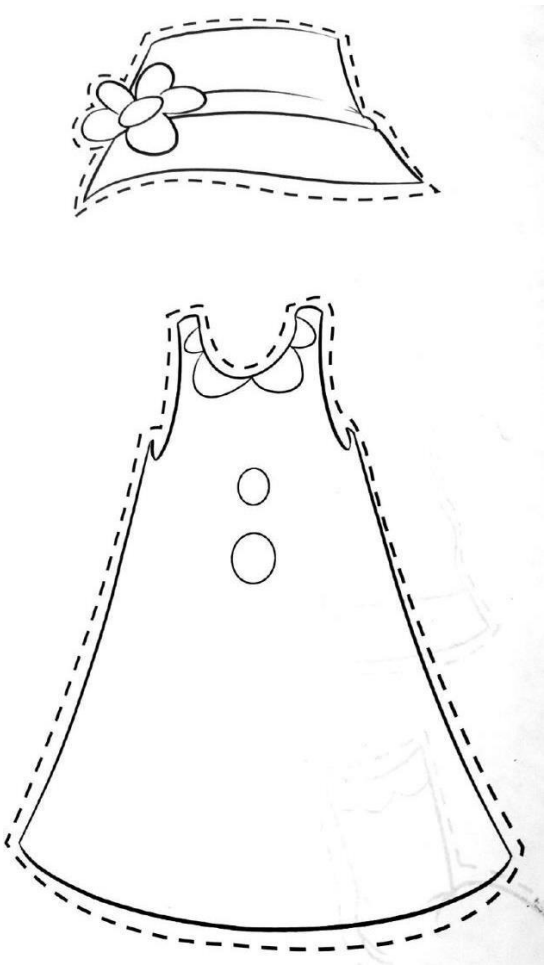
Day 2: - Browse clothing catalogs and comment - right / wrong, aesthetic / unaesthetic, boy / girl, etc.

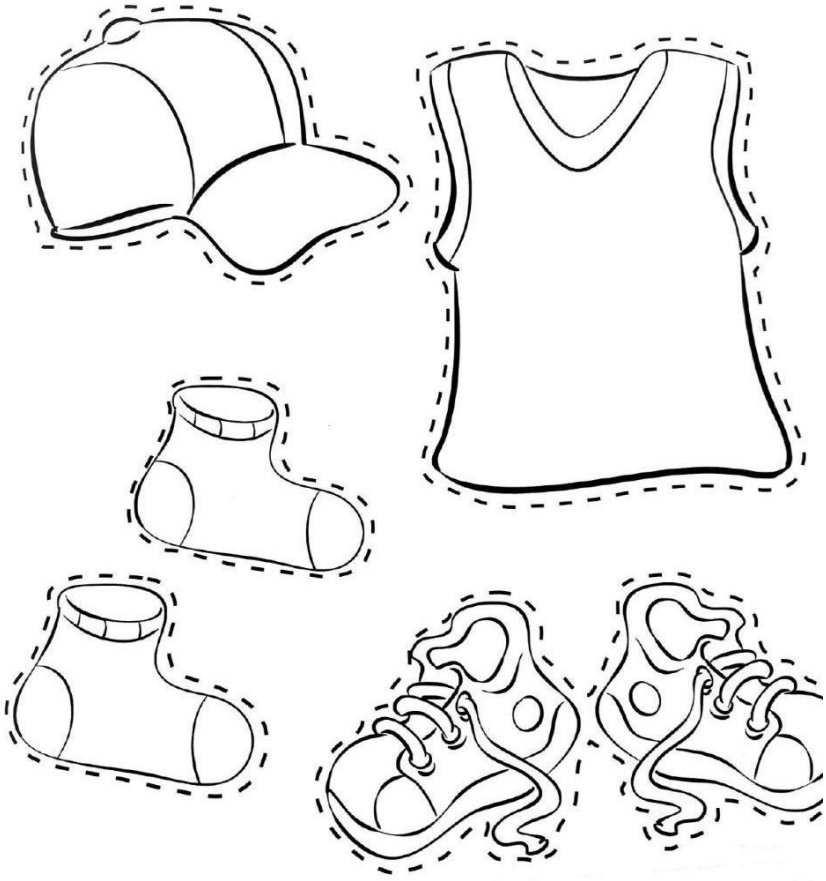
Day 3: - Color paper models of clothes and dress paper dolls.

Day 4: - Role play "Dress me". The children are divided into pairs and together choose clothes to their liking for the paper dolls, commenting on the occasion for which they are dressed - sports, birthday, winter, sea, etc. It is good, if possible, for couples to be a boy and a girl.
They then present their decisions to the audience, and she evaluates the selection of clothes for different occasions and seasons, as well as the combination of colors. Assessment is done with the help of emoticons or approved with a raised thumb.

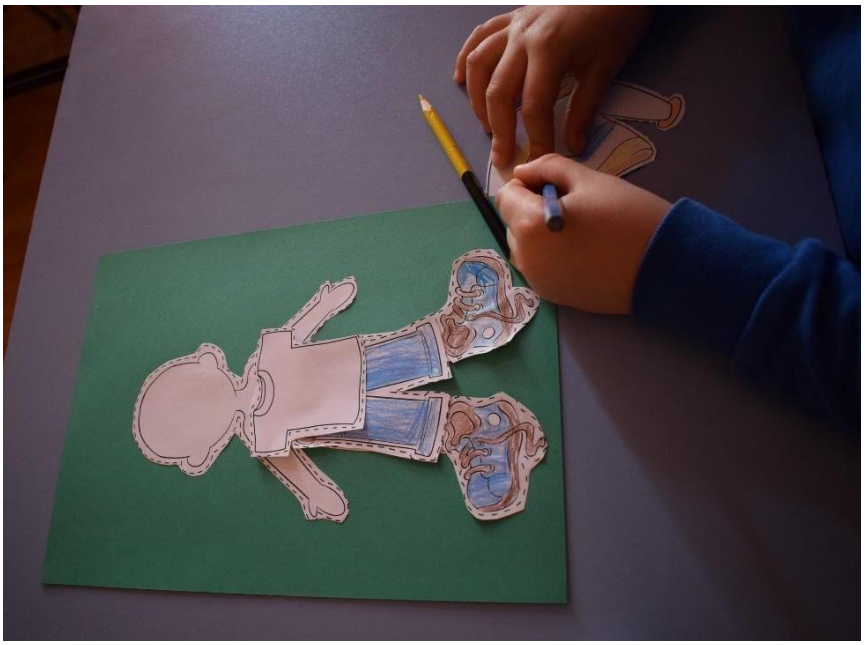
WORKSHEETS:







PICTURES:



Project 2: Professions for men and/or women
Number of pupils/children participating: 12
Age: 4-5 years old
Result:
Additional information: Children learn English from the age of 3. They already know some basic professions and this will be used as an interdisciplinary link in learning mother tongue / Bulgarian and foreign language / English. The lesson is focused on improving listening, speaking and developing fine motor skills. Students are introduced to a language related to the types of professions and their specific occupations.
Project description: Children have the opportunity to work individually and in pairs, to analyze and use information through guiding questions. To this end, the teacher asks them what mom and dad do, and then whether they know people who practice certain professions, considered clearly female or male. Children will also learn about new professions because there is no such division, what exists, imposed by gender stereotypes.
The main goal of the project: To acquaint students with diverse professions, emphasizing the possibility of each of them to be practiced by both men and women, using both languages. Emphasis is placed on three main goals: 1) There are not only "male" and only "female" professions; 2) Everyone can choose a profession that they like and be good at it; 3) Building skills for conducting a thematic conversation in a real situation.
Preliminary preparation: Conversation with the children on "What do my parents do?": Teachers comment on some professions unknown to the children, the specific activities of their parents, as well as the possibility of the profession to be practiced by both men and women.

Products: At the end of the lesson, three products will be created: 1) Individual: Children choose from the indicated options of professions which are suitable for girls and which for boys. 2) Individual: Children "assemble" professionals by adding a male or female face to paper figures, depending on the nature of the profession that the figure represents; 3) Group: Role play "When I grow up I will become" - children share what they want to become when they grow up and explain why they like this profession.
What other elements of a project-based lesson are used? Guiding questions; Impact and feedback; Specific content; 21st Century Skills; Public presentation of the product.
Benefits for students: Children will acquire knowledge and skills for free expression of opinion on different types of professions; as well as a tolerant attitude towards different professions, without gender division.
Project progress:
Day 1: - The children tell what mom and dad do, and then whether they know people who practice certain professions, considered frankly female or male.
Video link: https://www.youtube.com/watch?v=BfegL6UbX-0
Day 2: - The children choose from the indicated options of professions in paper version, which are suitable for girls and which for boys. They explain their choice.
Day 3: - Children "assemble" professionals by adding a male or female face to paper figures, depending on the nature of the profession the figure represents. They comment on their choice.
Day 4: - Role play "When I grow up I will become" - children share what they want to become when they grow up and explain why they like this profession.

They then present their decisions to an audience, and the audience evaluates them with the help of emoticons or approves with a raised thumb.

WORKSHEET:

PICTURES:

Project 3: Who is a better driver?

Number of pupils/children participating: 12

Age: 4-5 years old

Result:

Additional information: The lesson relies on the children's experience of traveling with their parents and their impressions of how to drive. It is focused on improving listening, speaking and developing fine motor skills. Students are introduced to language related to cars, road traffic, driving and car colors.

Project description: Children have the opportunity to work individually and in pairs, to analyze and use information through guiding questions. To this end, they share what the family car is, and the teacher reveals it and shows it to everyone. Children watch a video showing the role of traffic lights in the city. Children will have the opportunity to appreciate their parents as drivers and to color their own paper traffic lights and cars.

The main goal of the project: To strengthen the children's conviction that everyone on the road must follow the rules of the road. There are three main goals: 1) Everyone should be careful on the road; 2) All people can be good drivers; 3) Building skills for conducting a thematic conversation in a real situation.

Preliminary preparation: Conversation with the children on the topic "Do you know what the colors of the traffic lights mean? Do you travel by car often? Who drives your family car? Who is a more careful driver? ": If necessary, the teacher explains about the traffic lights and comments on how important it is to follow the rules of the road and be careful.

Product: At the end of the lesson three products will be created:

1) Individual: Children cut and color paper models at traffic lights. 2) Individual: Children cut and color paper car models to their liking. 3) Group: Role-playing game "Who is a better driver" - children work in pairs, exchanging views on what a good driver should do on the road and compete with handmade cars, observing the traffic lights.

What other elements of a project-based lesson are used? Guiding questions; Impact and feedback; Specific content; 21st Century Skills; Public presentation of the product.

Benefits for students: Children will acquire knowledge and skills for free expression, knowledge and observance of the basic rules of movement; tolerant attitude towards mom and dad's driving skills, without gender division.

Project progress:

Day 1: - Independent task: Before creating paper models of traffic lights and cars, children watch a video that shows the role of traffic lights in the city.

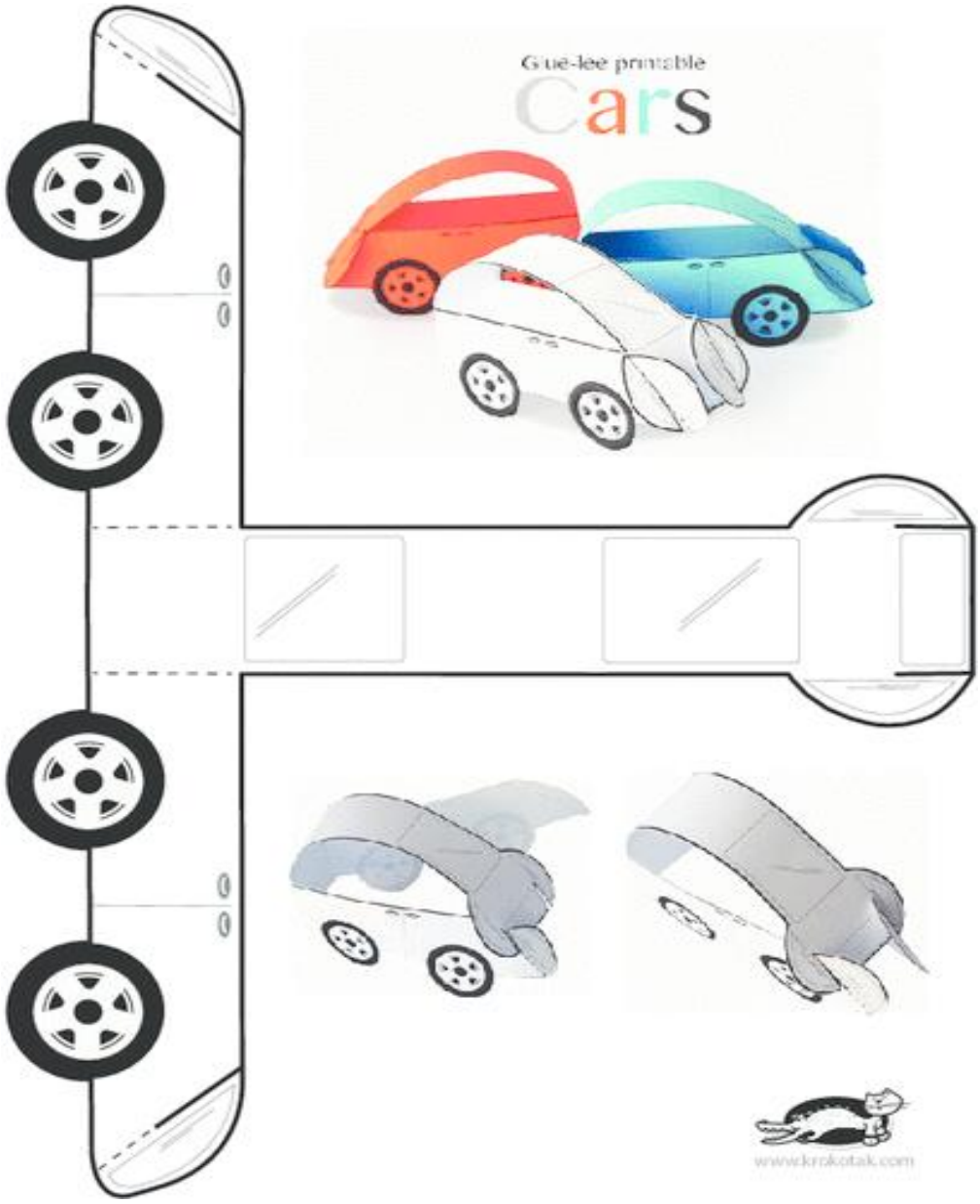
Link to the video: https://www.youtube.com/watch?v=qY5GkQemUe0

Day 2: - The children cut and color paper models of traffic lights, before and / or at the same time commenting on his role on the road.

Day 3: - Cut and color a paper car model and compete with handmade paper cars, observing the traffic lights.

They then present their decisions to an audience, and the audience evaluates them with the help of emoticons or approves with a raised thumb.

WORKSHEETS:



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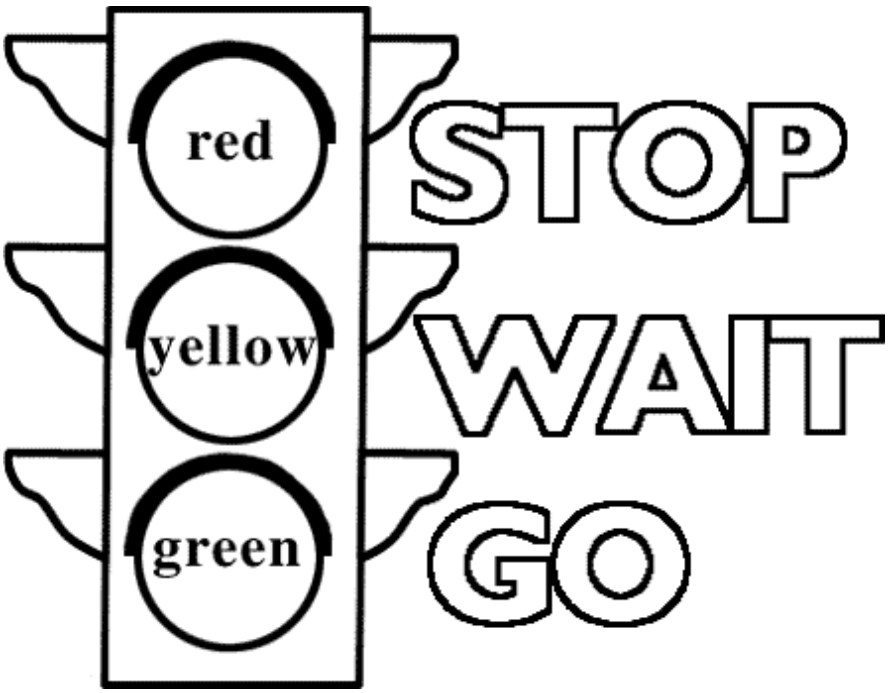


http://www.clipartbest.com/clipart-dirobMd5T

PICTURES:

Project 4: Space is for everyone

Number of pupils/children participating: 12

Age: 4-5 years old

Result:

Additional information: From an early age, children learn about rockets flying in space, the Moon and Venus. The lesson is focused on improving listening, speaking and developing fine motor skills. Students are introduced to a language related to space exploration.

Project description: Through guiding questions, children share what they know about space exploration. To do this, the teacher asks them if they know how to make rockets, who creates them, what kind of people are astronauts, what you need to be to become an astronaut. Children will learn that in the mastery of space, there is no and should not be a division imposed by gender stereotypes.

The main goal of the project: To acquaint children with age-appropriate facts related to space, emphasizing the opportunity for both men and women to work in this field. There are three main goals: 1) Both men and women can build spaceships; 2) Both men and women can choose the profession of astronaut, as long as they are physically fit; 3) Building skills for conducting a thematic conversation in a real situation.

Preliminary preparation: The teacher asks the children: Do they know what the astronaut does? How do they go to work? What happens when they are launched with a rocket? Who creates the rockets and where? etc. After receiving answers to these questions, the teacher supplements their knowledge with facts available to their age.

Products: At the end of the lesson two products will be created:

1) Individual: The children create a paper rocket led by their teacher.
2) Group: Together with the teacher all together construct a model of a space station.

What other elements of a project-based lesson are used? Guiding questions; Impact and feedback; Specific content; 21st Century Skills; Public presentation of the product.

Benefits for students: Children will acquire knowledge and skills for free expression of opinion on various aspects of cosmic reality; as well as a tolerant attitude towards the various "space" professions, without gender divisions.

Project progress:

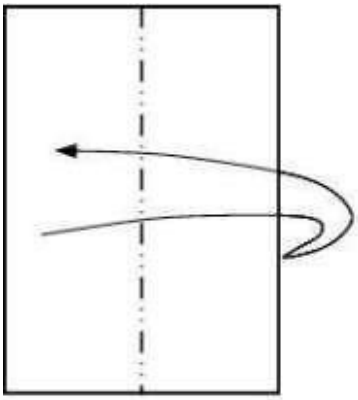
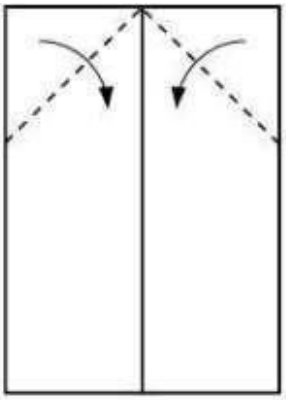
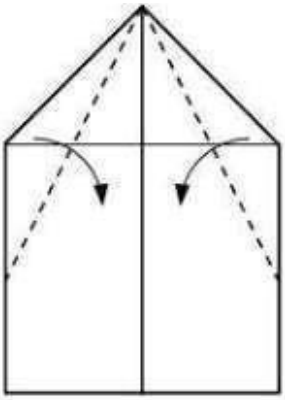
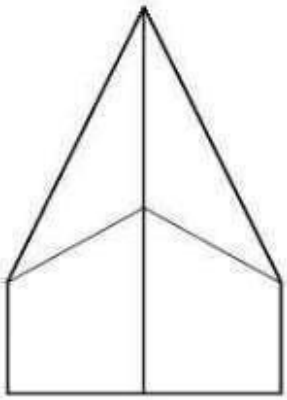
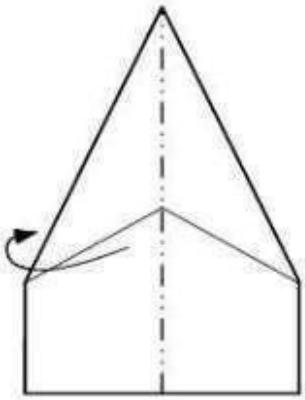
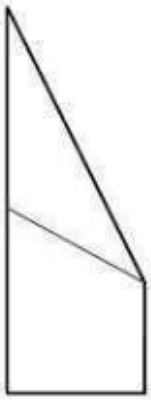
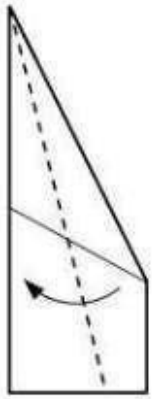
Day 1: - The children talk about what they know about space, spaceships and astronauts, with the teacher guiding them and supplementing their knowledge. They are watching a video about life in space.

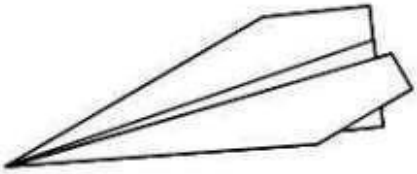
Link to the video: https://www.youtube.com/watch?v=-Y04Zic1-r4

Day 2: - The students make a paper model of a rocket, and then help their teacher to create a model of a space station.

The students then presents their decisions to an audience, and that audience evaluates them with the help of emoticons or approves with a raised thumb.

WORKSHEET:



PICTURES:

Project 5: Toys are for everyone

Number of pupils/children participating: 12

Age: 4-5 years old

Result:

Additional information: Children learn English from the age of 3. They have already studied the colors and the names of some toys and this will be used as an interdisciplinary link in learning the mother tongue / Bulgarian and foreign language / English. The lesson is focused on improving listening, speaking and developing fine motor skills. Students are introduced to a language related to the colors and different toys.

Project description: Children have the opportunity to work individually and in pairs, to analyze and use information through guiding questions. For this purpose, they answer which are their favorite toys, as well as those of their siblings. They get the opportunity to choose toys for girls and boys in their own way. Watch a video - determine who is playing with the presented toys and learn new words.

The main goal of the project: To acquaint children with the terms about the most popular toys and colors, as well as to combine them using both languages. Emphasis is placed on three main goals: 1) Building skills for recognizing and choosing toys; 2) Building color selection skills for these toys; 3) Building skills for conducting a thematic conversation in a real situation.

Preliminary preparation: Discussion with the children on "Which toys are for girls and which are for boys?": The teacher comments on the possibility for both girls and boys to play with the same toys.

Product: At the end of the lesson two products will be created:

1) Individual: Children choose toys and decide who to play with - a boy or a girl. 2) Individual: Children color different toys according to who will play with them.

What other elements of a project-based lesson are used? Guiding questions; Impact and feedback; Specific content; 21st Century Skills; Public presentation of the product.

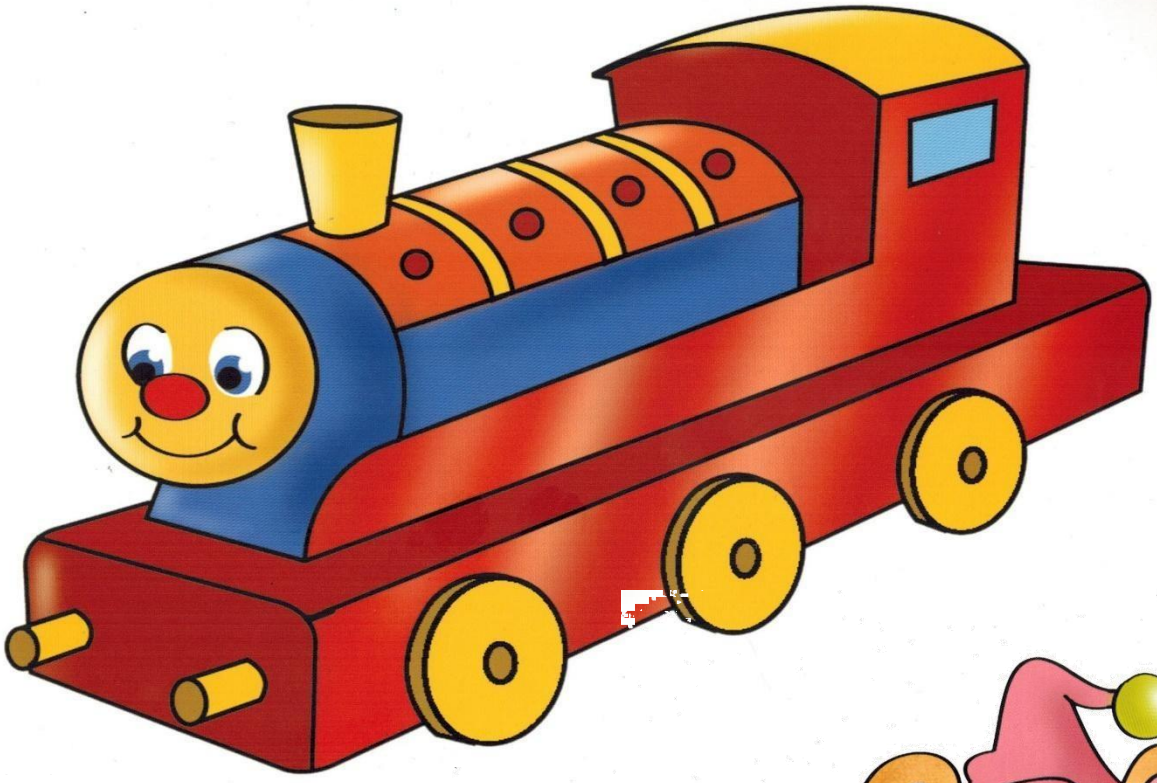
Benefit for students: Students will acquire knowledge and skills for free expression, to combine colors and shapes; tolerant attitude towards the other's clothing without gender segregation.

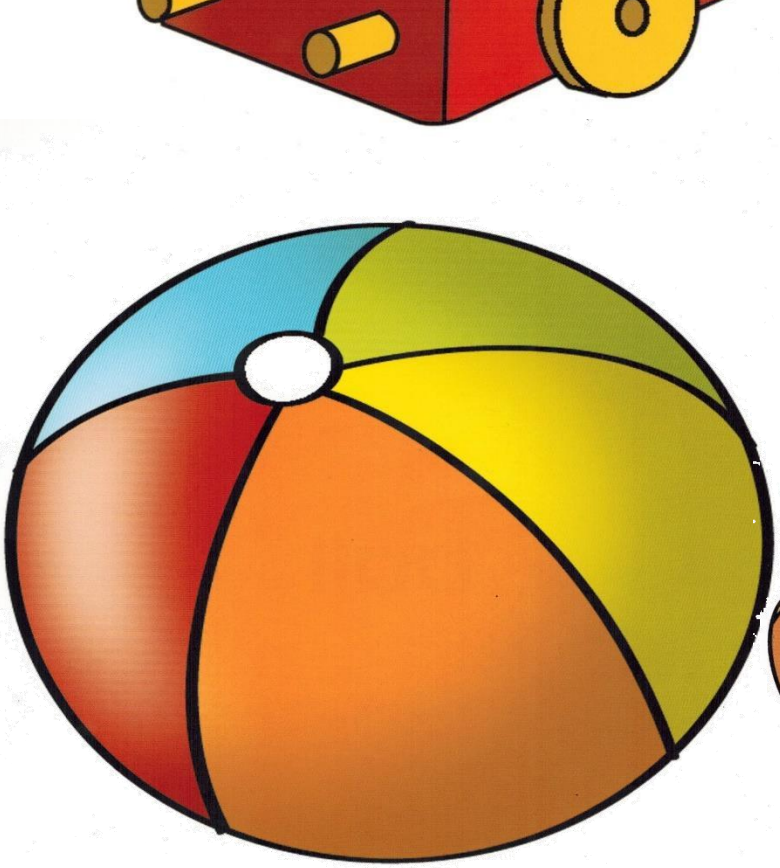
Project progress:

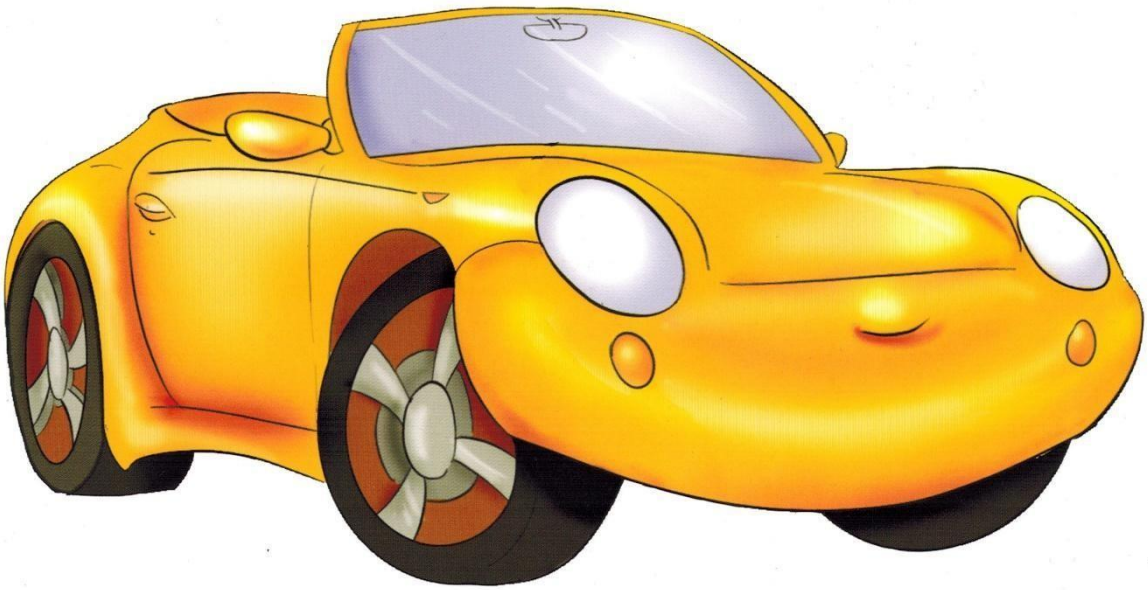
Day 1: - The children discuss in Bulgarian and English the colors and the different types of toys. Before commenting on the toys and who is playing with them, they watch a video dedicated to the toys.
Video link: https://www.youtube.com/watch?v=Q_EwuVHDb5U

Day 2: - Comment on your favorite toys and who should play with them. The teacher explains that any child can play with any toy as long as he wants. They color toys depending on their sense of appearance and comment on why they like the choice made.
They then present their decisions to the audience, and she evaluates the selection of toys for boys and girls, as well as the combination of colors. Assessment is done with the help of emoticons or approved with a raised thumb.

WORKSHEETS:







PICTURES:

CHAPTER TWO
PARTNER: Fundatia Professional, Romania

A Project Based Learning for creating mini-projects by children/pupils following the procedures specific to PBL. Projects will be presented in front of teachers, parents, peers, stakeholders, decision-makers and policy formulators, Business Mentors, etc in each country.

Objectives:

- helping Art and Science become accessible and inclusive;
- clarifying the meaning of Art of Science concepts and culture;
- fostering collaborative works in which scientific and aesthetic components are mutually enhanced

What is PBL methodology?

Project-based learning (PBL) is a learner-centered pedagogy that involves a dynamic classroom approach in which it is believed that children acquire a deeper knowledge through active exploration of real-world challenges and problems. Children learn about Art and Science subjects by working for an extended period of time to investigate and respond to a complex question, challenge, or problem. It is a style of active learning and inquiry-based learning. PBL is in contrast with *paper-based, rote memorization, or teacher-led instruction* that presents established facts or portrays a smooth path to knowledge by instead posing questions, problems, or scenarios.

Why do we use the PBL methodology?

Project Based Learning, in this case, is used to find out more about Art and Science. (probably technology as well)

Detailed procedures

It could be an effective method to achieve better teachers' (pupils) engagement, by transferring the focus on *the learner*, thus creating learner-centered activities, where core 21st-century skills, like *communication, collaboration, critical thinking, and creativity* are addressed. The use of ART and Science will allow the teachers to discover methods and teaching material ready to be used in class with their pupils. By first experiencing both the content and the methodology appropriate to gender bias in STEM they will strengthen their understanding and practice.

Steps towards PBL activity 'Introducing ART in STEM'

1. Hands on activity: talking about the steps to follow for a well-planned PBL.
It is important to use PBL approach in STEM with Inquiry-Based Learning (IBL) in STEM, strategies taking into account gender-sensitive language and gender equality and equity.

I. Involve your trainees/pupils boys and girls respecting equal numbers but also equal involvement from the beginning (Brainstorming)
II. Break down the topic into well-defined tasks – Inquiry-Based Learning https://www.youtube.com/watch?v=XbxDHqf883g
III. Plan well, set goals, define outcomes (encourage participants to ask questions IBL) IV. Divide your class into working groups with well-defined tasks
IV. Create a tangible artifact as an output (something like an object, a poster, a map, a video, a robot, an IT application)
V. Arrive at a conclusion VII. Document and present to a public audience (peers, school, local community, parents, stakeholders, policy formulators, decision-makers, and Business mentors) By providing teachers with these new approaches in pedagogy we will motivate both the teachers and the children by linking the class work with the real world. Creating something concrete and presenting it in front of an audience will develop children's public speaking skills, self-confidence, and self-assurance. Artistic skills are of utmost importance for developing creativity. Videotaping will be provided as proof of the activities carried on in each country.

Practice makes perfect!

Caring for another new generation of children - technological, mobile, and adaptable, changes educational standards and requirements and quite logically starts STEAM-based learning in early education.

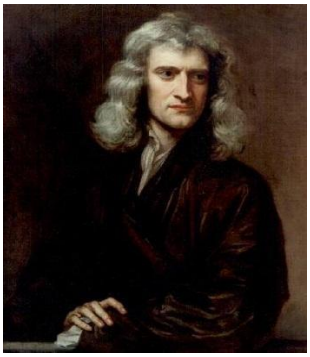
Project 1: Art&Motion (Art&Physics)

Number of pupils/children participating: **8**

Age: 12-13

Result: *Are you fascinated by the almost endless possibilities of human movement? This PBL includes concepts in the field of physics, including equilibrium. The MotionGroup discussed how laws of physics apply to both the human body and human motion.*

How to link that with ART? How to link that to Gender?



Have a look at the exhibits!

We started from this amazing scientist Sir Isaac Newton contributed significantly to the field of science over his lifetime. He invented calculus and provided a clear understanding of optics. But his most significant work had to do with forces, and specifically with the development of a universal law of gravitation and *his laws of motion. That is creatively exemplified with Women in motion in kids' work.*

PICTURES:

Project 2: (Art&Architecture) How the Fortresses were built

Fortresses were built as part of a well-planned defensive system. We have one in our city. Let's do some fieldwork. 9 girls and a boy of 11-12 started the PBL by brainstorming ideas and going on with the fieldwork.

"Girls let's go inside the fortress to catch some sketches first. We might choose Architecture as a profession later."

PICTURES:

Back to work. Modeling parts of the fortress.

Project 3: Art&Geometry

First, our Project Based Learning started with a visit to the local Art Museum. A bunch of 15 kids went to the cool and magical halls of the museum. We received handouts with the characteristics of the works of art.

PICTURES:

Then we organized our work exchanging ideas and questions.

From a circle in the middle of the painting, we started reconstructing the famous painting ‘Car cu boi’ inside the Art Museum of Târgu Mureș which periodically presents some of the most beautiful works in its collection.
Today, oil on canvas, 32.5 x 69 cm, signed and dated ‘Grigorescu, 1896’ our famous Romanian painter (Nicolae Grigorescu).

After researching, puzzle work. It took a lot of time.

We did it!

Imagination has no limits.

Project 4: Clay&Chemistry

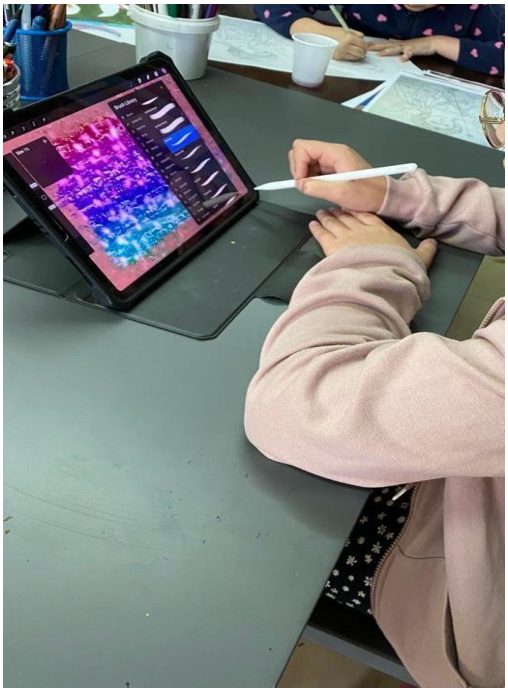
Clay minerals are composed essentially of **silica, alumina or magnesia or both, and water**, but iron substitutes for aluminum and magnesium in varying degrees, and appreciable quantities of potassium, sodium, and calcium are frequently present as well.

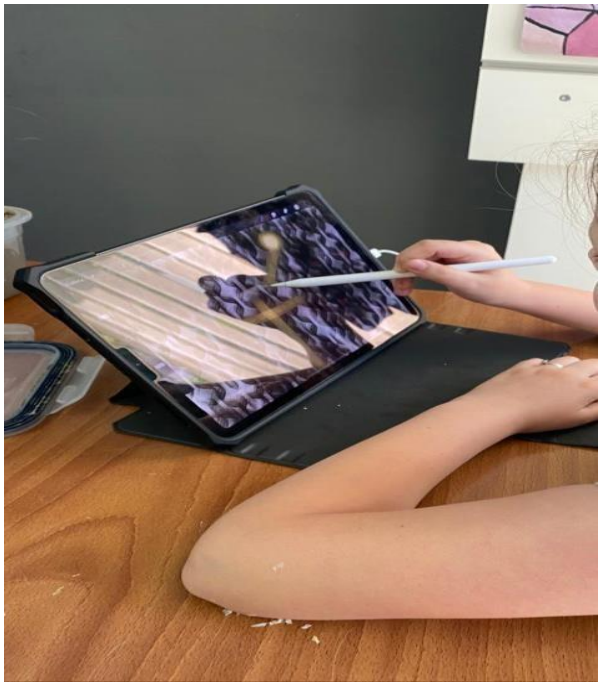

Some results:

Project 5: ART&IT

Project Based Learning

Girls use special tablets for creating Graphic ART





Pitching their Project-based Learning products.

These STEAM Project-Based Learning sessions focus on how art lessons can be used to reinforce essential skills such as: making calculations, using units of measurement, problem-solving, testing a hypothesis, following directions, testing the strength of a design, collaboration, data collection, documentation, illustrating and communicating ideas in a visual format.

Exhibition and presentation of all PBL products to their parents, teachers, siblings, and peers in the beautiful venue of the Fortress

CHAPTER THREE

PARTNER: CCD MURES, ROMANIA

Project 1: **Aviators**

Partner: Liceul Tehnologic „Sfântul Gheorghe" Sângeorgiu de Pădure

Number of pupils/children participating: 28

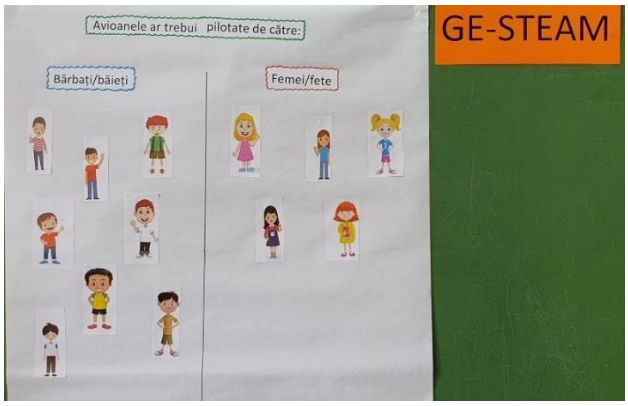
Age: 3rd grade (9-10)

Result:

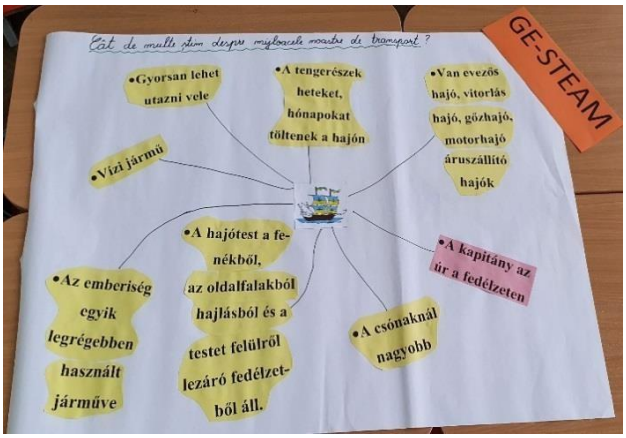
The topic is useful for widening perspectives on future professions for girls, because aviation is a profession that is mostly addressed for boys. By presenting the most famous female aviators, and by constructing paper planes girls will be motivated not to be afraid to choose „unusual" professions for them.

By the end of this activity a connections will be estabilished between arts and science lesson.

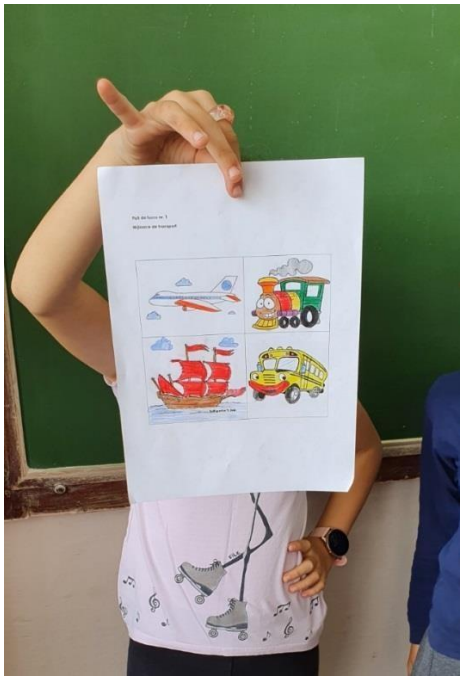
PICTURES:


Avioanele ar trebui pilotate de către:
Bărbați/băieți
Femei/fete
GE-STEAM


Aceste mijloace de transport ar trebui conduse de către:
Bărbați/băieți
Femei/fete
GE-STEAM


Ezt de mulle szem deszer mijloacele moderne de transport?
GE-STEAM
•Gyorsan lehet utazni vele
•A tengerészek heteket, hónapokat töltenek a hajón
•Van evezős hajó, vitorlás hajó, gőzhajó, motorhajó áruszállító hajók
•Vízi jármű
•A hajótest a fenékből, az oldalfalakból hajlásból és a testet felülről lezáró fedélzetből áll.
•Az emberiség egyik legrégebben használt járműve
•A kapitány az úr a fedélzeten
•A csónaknál nagyobb


Ezt de mulle szem deszer mijloacele de transport?
GE-STEAM
•Gyorsan lehet utazni vele
•Kényelmes utazni vele
•Közlekedési eszköz
•A mozdony húzza a vagonokat
•Van személyszállító
•Síneken közlekedik
vonat és teherszállító vonat
•Kényelmes utazni vele
•Van aki naponta
•Kalauz dolgozik a vonaton
•Kalauz dolgozik a vonaton
•A mozdony húzza a vagonokat
•Van aki naponta
közlekedik vonattal



Project 2: **Aviators**

Partner: Școala Gimnazială „Aurel Mosora" Sighișoara

Number of pupils/children participating: **35**

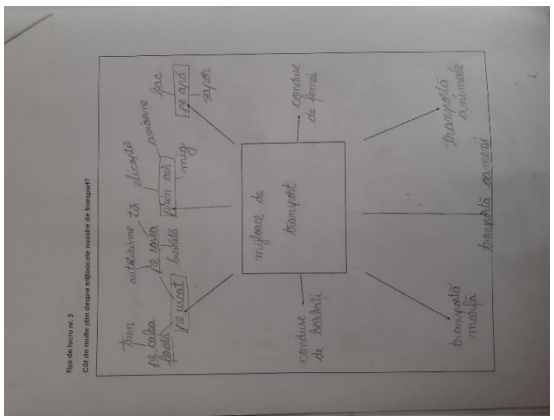
Age: 4th grade (10-11)

Result:

The topic is useful for widening perspectives on future professions for girls, because aviation is a profession that is mostly addressed for boys. By presenting the most famous female aviators, and by constructing paper planes girls will be motivated not to be afraid to choose „unusual" professions for them.

By the end of this activity a connections will be established between arts and science lesson.

PICTURES:



Project 3: **Aviators**

Partner: Școala Gimnazială „Traian" Târnăveni

Number of pupils/children participating: 35

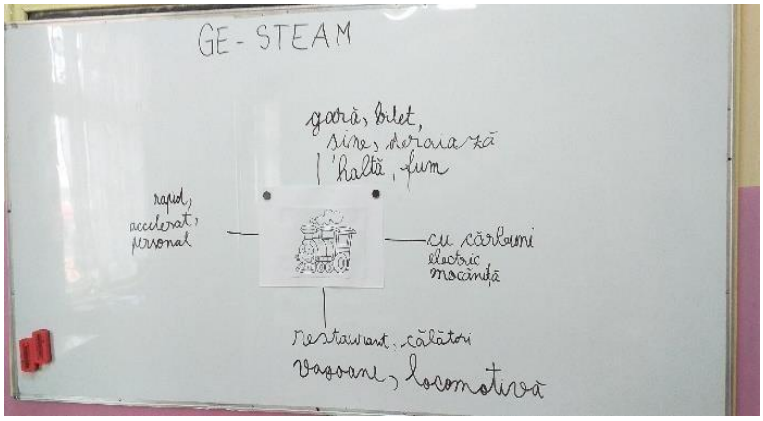
Age: 4th grade (10-11)

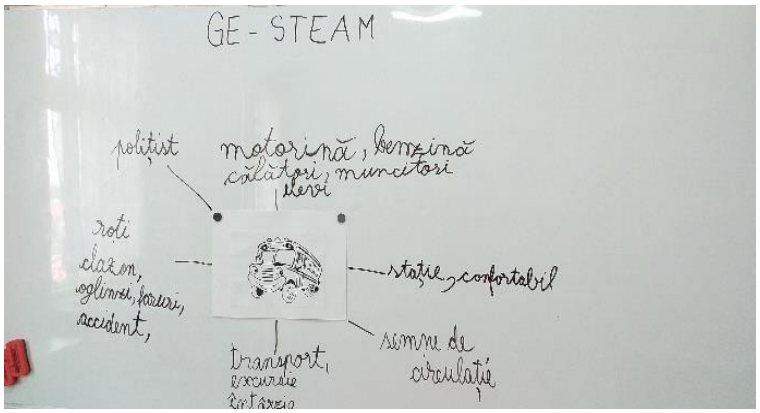
Result:

The topic is useful for widening perspectives on future professions for girls, because aviation is a profession that is mostly addressed for boys. By presenting the most famous female aviators, and by constructing paper planes girls will be motivated not to be afraid to choose „unusual" professions for them.

By the end of this activity a connections will be established between arts and science lesson.

PICTURES:


GE - STEAM
gară, bilet,
sine, deraia zã
l'halte, fum
rapid,
accelerat,
personal
cu cărbuni
electric
mecanică
restaurant, călători
vagoane, locomotiva


GE - STEAM
polițist
motorină, benzină
călători, muncitori
elevi
roți
claxon,
oglinzi, faruri,
accident,
stație confortabil
semne de
circulație
transport,
excursie


GE-STEAM
ERASMUS
AVIATORUL

Project 4: **Frederick, the mouse**
Partner: Școala Gimnazială „Liviu Rebreanu" Târgu Mureș
Number of pupils/children participating: 35
Age: 4th grade (10-11)
Result:

Through this activity pupils will have the opportunity to practice artistic skills and abilities discovered in the story, they will discover the beauties/advantages of different occupations. This topic is perfect example for deconstructing classical stereotypes concerning work (could an artistic career be considered a good job or not, is Frederick's attitude a right/correct one, who should be more successful artist: boys or girls, etc.), increasing awareness of the importance of artistic education.

It also creates conditions for fostering respect and good attitude towards people from different professions related to artistic career; it also develops the ability to work in a group; it increases the tolerant attitude to the opinion of the partner; it improves verbal argumentation.

PICTURES:


GE-STEAM
ERASMUS +
Frederick, șoricelul


GE- STEAM
Școala Gimnazială "Liviu Rebreanu"
Tg. Mureș
Urmează să descoperim un alt text cu personaje șoricei.
Cum îți imaginezi personajul principal?

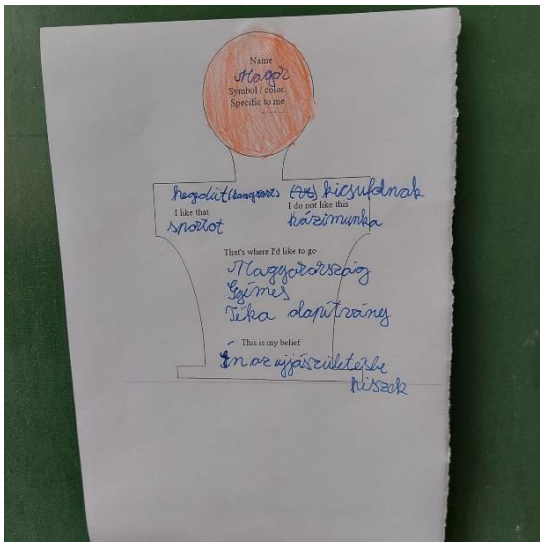

GE- STEAM
Școala Gimnazială "Liviu Rebreanu"
Tg. Mureș
Îți plac poveștile cu personaje feminine/masculine?
Răspunsuri date de fete

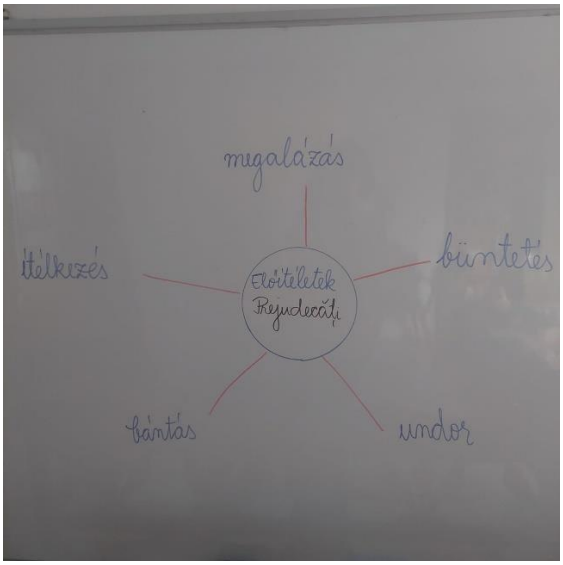

GE- STEAM
Școala Gimnazială "Liviu Rebreanu"
Tg. Mureș
Îți plac poveștile cu personaje feminine/masculine?
Răspunsuri date de băieți

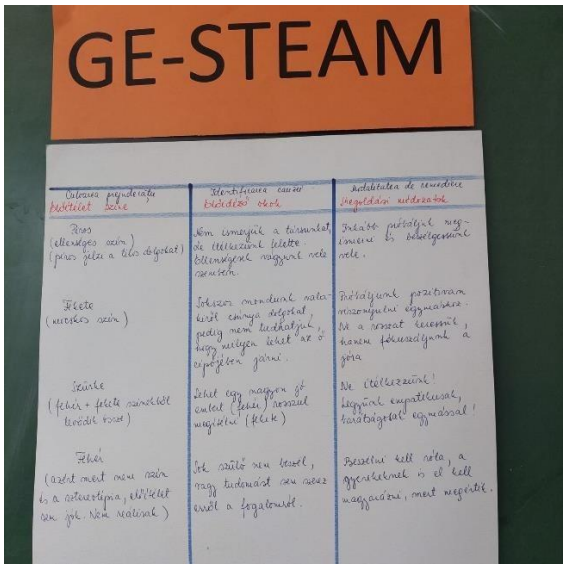
Project 5: The figure of the ego
Partner: Liceul Tehnologic „Sfântul Gheorghe" Sângeorgiu de Pădure
Number of pupils/children participating: 25
Age: 4th grade (10-11)
Result:
Through this activity pupils will be able to form attitudes corresponding to the subject discussed in the lesson, moving to other school, selecting school/bench-mates, new friends and thus they will:
- easily integrate in new class community
- develope the ability of knowing people, without prejuduces
- have tolerant attitude toward differences

PICTURES:


GE-STEAM


Name
Symbol / color
Specific to me
I like that
I do not like this
That's where I'd like to go
This is my belief


megalázás
ítélkezés
büntetés
Előítéletek
Rejtegetői
bántás
undor


GE-STEAM

CHAPTER FOUR

PARTNER: Future in Perspective Limited, IRELAND

Project 1: Audio Portraits

Stereotype Addressed (linked to IO1): Stereotype II. Boys show an aptitude for how things work – linked to engineering work.

Number of pupils/children participating: Group/Individual Task

Age: 12 years old

Materials needed:

- **Smartphone/ PC / Tablet**
- **Paint**
- **Paintbrushes**
- **Paper/Canvas**

Result:

Did you know that only 33% of female employees work in tech-related positions worldwide? Technology in the 21st century is very important as it offers various tools to boost development and exchange information. Do you know that sound is caused by vibrations? Find out more by creating your own artistic portrait.

Step 1: Record a word or a phrase on an audio-recording programme such as GarageBand, where the soundwaves are visible. This can be completed on a smartphone, computer, or tablet.

Step 2: Next, you will use your recording to create your Audio Portrait. You can copy the shape of the recording to represent it on a page or canvas. This activity can be a fun way to explore the science behind sound and examine the idea of portraiture through voice frequencies. It also introduces both science and technology to female and male students. If this activity is taking place as a group activity, you can repeat the same word of phrase as your peers, to see how they differ

from each other. Not only will this combine technology and art, but it can also identify how a voice, like a fingerprint, is one of a kind.

PICTURES:

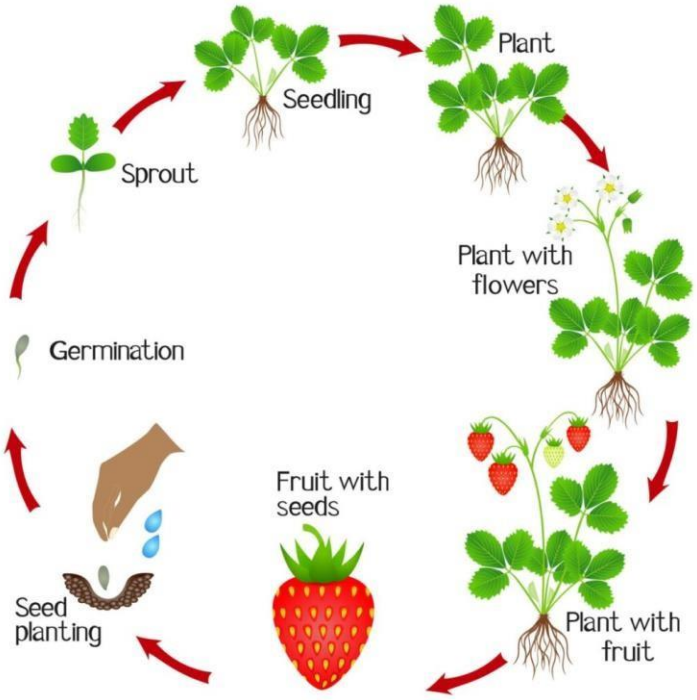
Source: https://theartofeducation.edu/2018/02/06/8-art-projects-incorporate-science/

Project 2: Grow with me!
Stereotype Addressed: Stereotype IV. STE(A)M is not for girls.
Counter Argument Promoted: Since the introduction of ART in STEM many opportunities open for girls.
Number of pupils/children participating: Group/Individual Task
Age: 12 years old
Materials Needed:

- **Paper (A3)**
- **Pencils**
- **Colouring Pencils**

Result:
Learning information can sometimes be difficult. However, it often helps to summarise information in order to retain it. Imagine that you are creating a poster to explain how plants grow to young children. How would you design it?
Step 1: First you will need to do some research on how plants grow and their different life stages.
Step 2: Start designing your poster! You can include diagrams, drawings, facts, etc.
Step 3: Present your poster, explaining the reasoning behind your poster design and how it would be effective for younger learners.

PICTURES:



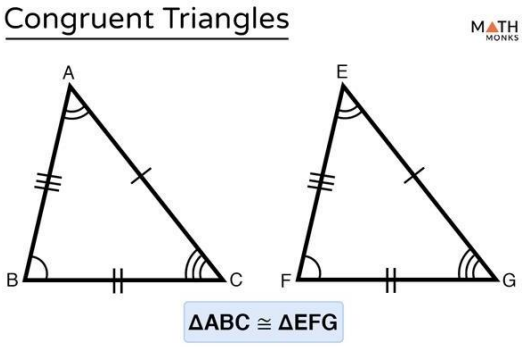
Source: https://strawberryplants.org/life-cycle-of-strawberry-plants/

Project 3: ARchiTecture
Stereotype Addressed: Stereotype II. Boys show an aptitude for how things work – linked to engineering work.
Counter Argument Promoted: Boys are given more opportunities to construct, build and fix things. (This is in the nature of toys they are encouraged to play with).
Number of pupils/children participating: Group/Individual Task
Age: 12 years old
Materials needed:

- **Pencil**
- **Paper**
- **Internet Access**

Result:
Congruent triangles are triangles that have 3 equal sides and angles. Did you know that many pieces of architecture feature congruent triangles?
Step 1: Research a famous piece of architecture that contains two congruent triangles (examples below).
Step 2: Re-draw the building, redesigning it with non-congruent triangles.
Step 3: Present your new creation, describing why you chose this piece of architecture and discuss how this change impacted its structure.

PICTURES:



https://geometryandarchitecture.weebly.com/triangles.html

Project 4: Comic Strips

Stereotype Addressed: **Stereotype IV. STE(A)M is not for girls.**

Counter Argument Promoted: Since the introduction of ART in STEM many opportunities open for girls.

Number of pupils/children participating: Group/Individual task

Age: 12 years old

Materials Needed:

- **Pencil**
- **Paper**
- **Colouring pencils**
- **Internet access**

Result:

Many events in history are based on scientific discoveries. Such as the big bang, global warming, moon landing, etc.

Step 1: Research a scientific event that happened in history. This will be the basis of your comic strip sequence.

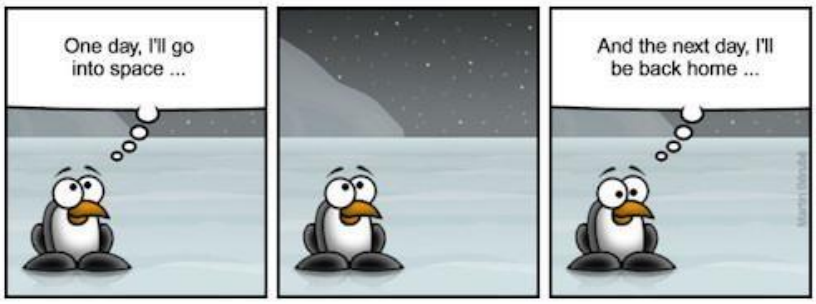
Step 2: On an A4 page, draw 3 frames. Brainstorm how you are going to present your comic strip. What setting will you have? What characters will feature? What will the speech bubbles say? You can do so using a mind-map if it helps.

Step 3: Draw your comic strip. Remember you can use basic shapes to draw.

Step 4: Add in the speech and lettering.

Step 5: Present your idea and explain why you chose that specific event.

PICTURES:



(Source: https://www.how-to-draw-funny-cartoons.com/writing-a-comic-strip.html - Three Panel Comic)

Project 5: Lights, Camera, Action
Stereotype Addressed: Stereotype IV. STE(A)M is not for girls.
Counter Argument Promoted: Since the introduction of ART in STEM many opportunities open for girls.
Number of pupils/children participating: Group/ individual Task
Age: 12 years old
Materials Needed:

- **Smartphone**
- **Props (optional)**
- **Internet access**

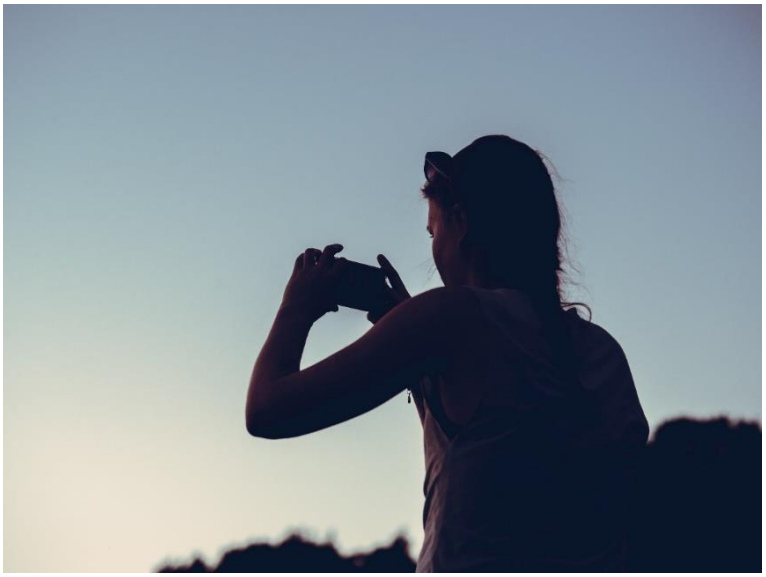
Result:
Have you ever thought about creating a piece of art? How could you do so by integrating technology? Why not make a video, showing off your creative and technical skills.
Step 1: First decide what you are going to shoot. Pick from one of the following ideas:

- My scientific discovery
- Evolution
- Nature
- Humans

Step 2: Research your idea so that you have a greater knowledge of the topic.
Step 3: Get shooting your 60-second video. Once you know which topic you have chosen, you can start filming. You can record your shots on your smartphone. You can also ask a trusted adult to help you film if you want to be the star in your production. If you are doing this as part of a group, work as a team to assign who will do what in your video (director, actor, etc.).
Step 3: Once you have shot your scenes, you can put them together using a free video editing app of your choice (CapCut, iMovie, etc.).

Step 4: Present your video and explain what you learned from filming it.

PICTURES:



(Source: Photo by Jamie Street on Unsplash)

CHAPTER FIVE
PARTNER: POSTAL 3, SPAIN

Age group: 6 to 10 years old

Language level of the students: Spanish, English
Additional information: Children learn English from the age of 3. They have already studied the colors, numbers, food, means of transport, etc. and this will be used as an interdisciplinary link in learning the mother tongue / Spanish and foreign language / English.

Project description: Children have the opportunity to work individually and in pairs and teams to analyze and use information through guiding questions about STEAM careers. They have the opportunity to create a salt pendulum, a shape book template, skewer structucre, paper neighborhood block and color wheel to visualize STEAM activities as something funny and interesting.

The main goal of the project: To acquaint students that STEAM jobs have been carried out by women in all times and the importance of STEAM careers for the progress of humanity.

Preliminary preparation: Conversation with the children on the topic "Women in STEAM": Teachers comment on the role of women in science by asking questions.

Product: At the end of the 3 lesson 5 products will be created:
1) Pair work: Children will create a Salt Pendulum. 2) Individual work: Children will create a shape book template. 3) Pair work: Children will create a skewer structure. 4) Team work: Children will create a neibourghood block. 5) Individual work: Children will create a color wheel.
Public presentation of the product.
Benefit for students: Students will acquire knowledge and skills for creating an object related to STEAM without gender segregation.

Project 1: Thinking about gender "we are equal, we are different"

The children discuss in Spanish and English the role of women in Science.
Independent task: Before making the Salt Pendulum, children watch a video dedicated to women in Science.
https://www.youtube.com/watch?v=W53Ks824GTA

Salt Pendulum:
Materials:
Colored Salt
Funnel
String
Thumbtacks (optional)
Beads (optional)
Hot Glue
Black paper or board
Tape
A doorway for hanging the pendulum

Instructions:
Step One - Punch three evenly spaced holes near the top of your funnel.
Step Two - If you are using thumbtacks push them through the holes and hot glue a bead onto the pointed end to protect fingers.
Step Three - Cut three equal lengths, roughly 10" to 12", of string and knot them together at the top.
Step Four - Tie the loose ends of the strings to the thumbtacks. If you are not using thumbtacks, thread the string through the holes in the funnel, knot them securely, and add a dab of hot glue to the ends.
They present their work to the rest of the classmates.

Result:
The teacher presented the lesson plan with the presentation of a video of women in Science and the group reflected about it.
While they made the salt pendulum, the teacher made them aware that it is not a matter of gender and everybody can build and create things.

Project 2: Thinking about gender "boys and girls work together"

The children discuss in Spanish and English the importance of Art in our lives.
Questions about most famous artists.
Independent task: they create a book shape template.

Book shape template:
Materials:

- Printer
- Cardstock/Paper (colored or white)
- Scissors
- Markers or crayons or colored pencils or paint

Instructions:

- **Step One**: Use the template
- **Step Two:** Cut out individual pages.
- **Step Three:** Color the page AROUND each shape and color the back page. If you are using colored paper you can skip this step.
- **Step Four:** Crease each shape at the dotted lines and make a cut at the center.
- **Step Five:** Cut out remaining shape. Repeat for all shapes.
- **Step Six:** Layer the pages in the following order, according to the number of sides in the shape:

Cover, Circle, Octagon, Hexagon, Rectangle, Square, Triangle, Back Page

- **Step Seven:** Staple pages together along the left edge.

They present their work to the rest of the classmates.
Assessment is done with the help of emoticons or approved with a raised thumb.
Children talk about Engineering careers and the presence of women in this field.
Pair work: They create a screw structure and a paper neighborhood block.

Screw structure:
Materials:
Long Bamboo skewers
go-to clay
Instructions

- Step One: Break off chunks of clay and shape them into ½" to ¾' balls. You can do this either as you work or prior to starting.

- Step Two: Build! Use the clay balls at the joints between the skewers. I recommend starting with a triangular shape but you can be more free form. Assessment is done with the help of emoticons or approved with a raised thumb.

Result:

At first, the children discussed the importance of Art in our lives. The teacher made questions about most famous artists.

The children presented their work to the rest of the classmates. Assessment was done with the help of emoticons or approved with a raised thumb.

Project 3: Changing your mind-set "boys and girls projects"

Paper neighborhood block:
Materials:

- Template (Material 4)
- Markers or Colored Pencil
- Pens
- Scissors
- Glue Stick

Time needed: 20 minutes.
Make a paper neighborhood block and learn about perspective.
Decorate the buildings with details:
Decorate front and side of each building with pens.
Add color:
Add color to the buildings. Add color to the sidewalk and street if using the uncolored template.
Cut out template:
Cut template along thick solid lines.
Fold the template:
Fold along dashed lines including the tabs. Fold buildings along "sidewalk" to make them stand up.
Glue tabs:
Add glue to tabs and assemble 3D buildings.

Children talk about the colors, favorite colors, stereotypes.
Individual work: They create a color wheel.
Color wheel:
Materials:

- Template: Print on cardstock or watercolor paper
- Koi Brush Pens
- Watercolors
- Paintbrush & Water or Waterbrush
- Oil Pastels
- Paper Towels

- Step One: Use water based markers to color the inner rings of the color wheel template. Leave the outer ring uncolored. Use the colors indicated on the template.

- Step Two: Add black marker to the small center ring of the template.
- Step Three: Use a waterbrush and/or paint brush and water to blend the colors. Start with the lighter colors and add water to the section where two colors meet. Clean the brush as necessary between colors.
- Step Four:Use the water brush to brush the pigment out toward the outer circle creating tints.
- Step Five:Use the water brush in the center to mix black with the color in the second ring. This creates a shade.

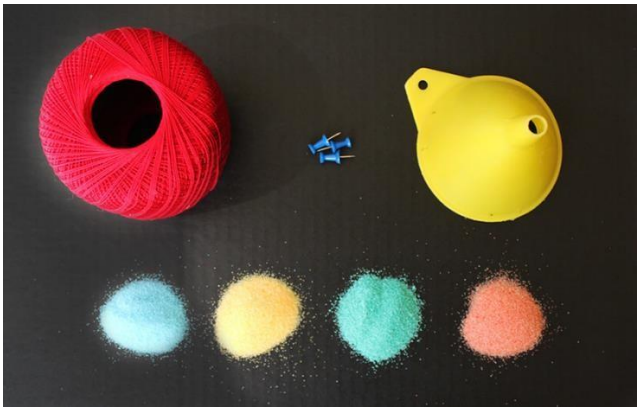
Assessment is done with the help of emoticons or approved with a raised thumb.

Result:

Children talked about the colours, favourite colors, stereotypes and all agreed there are no colours for girls or for boys. And finally, as an individual work they create a colour wheel.

MATERIALS:

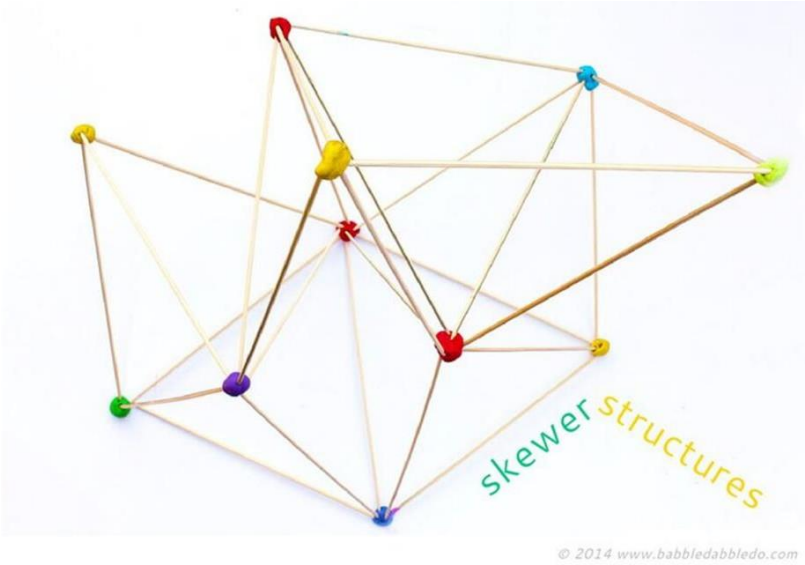
MATERIAL 1



MATERIAL 2

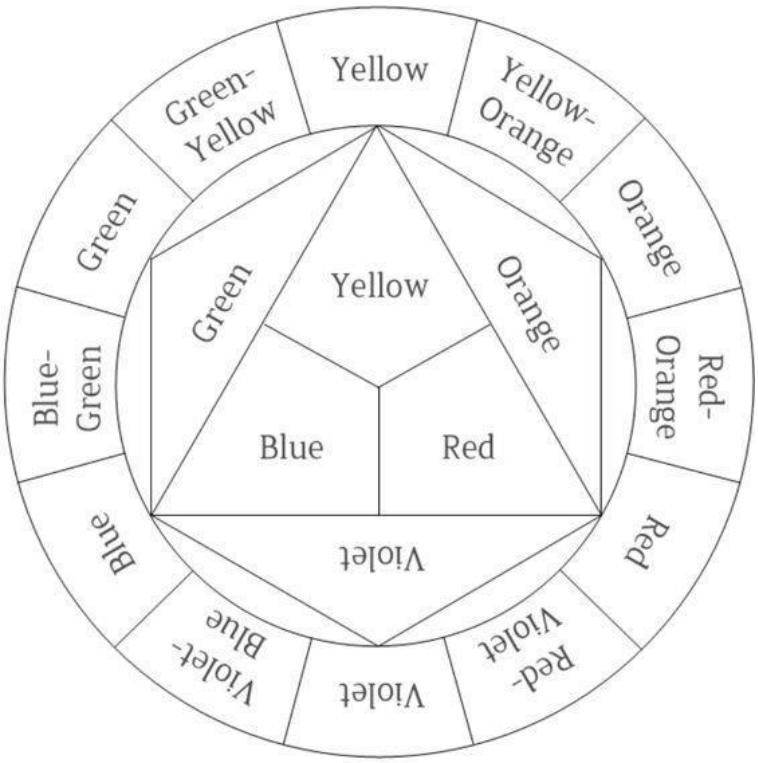
https://babbledabbledo.com/how-to-make-a-clever-shape-pop-up-book/

MATERIAL 3: Skewer Structures



MATERIAL 4:
https://babbledabbledo.com/how-to-make-a-paper-neighborhood-block/

MATERIAL 5


Yellow
Yellow-Orange
Orange
Red-Orange
Red
Red-Violet
Violet
Violet-Blue
Blue
Blue-Green
Green
Green-Yellow
Yellow
Orange
Green
Blue
Red
Violet

PICTURES:

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