Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
1	ETŠ“Nikola Tesla“	Belgrade	Serbia	The magic of color	16	6	This paper is designed to encourage students to understand the phenomenon of color. Observing the decomposition and composition of light, students understand the complex nature of light. And what basic colors are needeThed to get white. Research students get answers to the following questions: Why is grass green; What substances are used for coloring and how do they color; How is a rainbow formed? Students do artwork on the topic of color.
2	School of Aleksandras Stulginskis, Kaunas	Kaunas	Lithuania	"Bacteria"	3-5 years		Add milk to the plate and add pepper, which symbolizes bacteria (and other diseases). Don't mix! Ask the child to insert and pull in his finger - he will climb around with bacteria (pepper's)! Clean the dirty finger and wash it thoroughly in soapy water, then put it back in the milk with bacteria... Bacteria like mat will run away to countries!
3	Siauliai Gytariai Progymnasium	Siauliai	Lithuania	STEAM activities with Leonardo Da Vinci	14		In the sport of skydiving, a person jumps out of an airplane from a very high altitude, falls through the air, and releases a parachute to help the skydiver slow his or her way down and land safely on the ground. How does the parachute break the free fall so well?

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				prototype model			As the skydiver is falling, the force of gravity is pulling the person and his or her parachute toward the earth. The force of gravity can make an object fall very fast! The parachute slows the skydiver down because it causes air resistance, or drag force. The air pushes the parachute back up and creates a force opposite to the force of gravity. As the skydiver falls, these "push and pull" forces are nearly in balance.This project will be integration of STEAM activities. In history lessons you will analyse historycal Leonardo da Vinci parachute appearance, in technology lessons you will create parachute series from small to big, in mathematics you will count figura area, in IT lessons we will apply our informatics skills , in physics we are going to experiment whether large parachutes will fall more slowly than small ones and how the fall speed will be affected by body mass or parachute material, in geography lessons you'll be measuring air temperature, and in art lessons you will paint the parachutes.
4	„Verdene“ progymnasium	Klaipeda	Lithuania	Map of school activities	Pupils aged 11–12		Every school wants to be visible, to talk about itself in different forms. We offer to create a map of school activities using environmentally

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							friendly raw materials and applying natural scientific knowledge and creative abilities.
5	Alytus Dzukija school	Alytus	Lithuania	Bicycles and scooters shelter project	12-18		A survey of students revealed a lack of safe spaces where the means of movement by which students arrive at school can be left. Taking into account the ecology and promoting at environmentally friendly way of moving, it was decided to create a bicycle and scooter shelter project with the students. After choosing the right space in the school territory, using ecological materials, will plan an aesthetic, attractively designed roof model project. According to the developed project, will examine the building materials, their properties and select the most suitable roofing project. Will make a prospective construction estimate. Aim: to apply students ideas in real roof construction.
6	Alytus Jotvingiai Gymnasium	Alytus	Lithuania	Jazz of Items – Then, Now and in the Future	12-16		Create an assemblage of unused everyday objects or their fragments found in the home environment. At first students will learn about assemblage technique. After that they will apply the acquired knowledge in creating their own assemblage of unused everyday objects or their

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							fragments found in the home environment. Performing various mathematical calculations, analyzing a biochemical product composition and production technologies students will understand the possible new uses for old, unused items in creating works of art and in this way reducing environmental pollution. This task will increase students' ecological awareness, encourage them to sort secondary raw materials, be environmentally friendly and reduce consumer lifestyles.
7	Alytus kindergarten "Volungėlė"	Alytus	Lithuania	"CREATE A CAKE WITH A DIFFERENT GROUND FOR WATER PASSAGE"	3-5 years		The soil under our feet is very diverse. Pupils observe and collect (catching, digging) various soils of their choice (sand, gravel, clay, black earth, peat, etc.). Choosing secondary raw materials as a container (clear containers: bottle, disposable large glasses, etc.) will lay a different primer. Add water to the layered "cake" and watch which primer is most permeable to water. Monitoring will be recorded, summarized and conclusions drawn.
8	Alytus kindergarten „Volungėlė"	Alytus	Lithuania	Rainbow	2-3 years		Using secondary raw materials (toilet peper rolls) and freely choosing measures (guoache, plasticibe, colored pencils, colored paper) to create a rainbow. This task should encourage

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							you to explore the colours of the rainbow ant its shape.
9	Alytus kindergaten „Boružėlė"	Alytus	Lithuania	BIRD NEST	Preschool (6-7 y)		Returning birds are the first prophets of spring. Different types of birds lay their eggs in different places. Some build tiny nests in bushes, some build enormous nests in tall trees. Some lay their eggs directly on the ground or on rocky ledges. Those that build nests use many different types of materials. In this project you will try to build your own bird nest using only natural materials that you can find outside. Can you do better than a bird? Go outside and look around you for materials you can pick up easily. Think about the purposes different materials could serve. Pick up just natural materials that you find outside such as twigs, grass, leaves, dirt, rocks, sand, etc. The materials you have available will depend on where you live. Do not use any additional fasteners (adhesive tape, seam, glue, etc.). Build a nest that will hold one hen's egg.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
10	Alytus Putinai gymnasium	Alytus	Lithuania	Construct your telescope and glimpse at the deep – sky objects	14-16		Today's world is constantly getting more technology and innovation oriented. Thus, vast opportunities to explore it occur. Therefore, I was in need of a special equipment. Construct a functioning telescope, applying IT and other necessary means.
11	Alytus Saint Benedict Gymnasium	Alytus	Lithuania	Breathing system model	11-12		Using your biology knowledge and resource available to you model a human breathing system. Choose one of the following options: Option one. Create a model using as many recycled materials as possible; Option two. Creates a virtual model. For example, you can use Imagine Logo, Scratch, or a program of your choosing.
12	Alytus Saint Benedict Gymnasium	Alytus	Lithuania	Breathing system model	11-12		Using your biology knowledge and envy resource available to you create a human breathing system.Therese two options. Option one. Create a model using as many secondary materials as possible Option two. Creates a virtual model. For example, you can use Imagine Logo, Scratch, or a program of your choosing.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
13	Alytus Šaltiniai progymnasium	Alytus	Lithuania	Create an ecological electro-tricycle	12-15		While performing the task you will learn the history of electro-tricycle, it's movement principal based on physics and the features of geometric figures. Using ecological materials, design an ecological, visually attractive model of electro-tricycle based on facts and proof you've learned. Explain the operating principle of your model and name the advantages of this particular ecological mean of transport during the demonstration of its movement. While doing this task you will improve your maths, science, art and IT skills, as well you'll develop engineering, cognitive, creative, initiative, communicative competences. You will learn and work together!
14	Alytus's kindergarten "Volungėlė"	Alytus	Lithuania	Get to know beetles	4 years old		Pupils will collect as many natural materials as possible in their baskets during a walk outside. From the materials collected within 15 minutes, each child will lay out their imaginary beetle on place that they will choose. The task should encourage pupils to compare the size of the beetles, find similarities/differences, analyze body features.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
15	Anykščiai Jonas Biliunas gimnazium	Anykščiai	Lithuania	Integrate STEM activities through ongoing projects in the gymnasium	Students aged 14-18		To organize a group of innovative teachers in the gymnasium to encourage students to participate in the project. Activities would be designed to address and discuss local and global issues.Teachers would form working groups to help choose topics. Planned activities for the implementation of projects.A commission will be formed to evaluate the students' work. The works are publicized locally and regionally.
16	Armfelt school	Salo	Finland	Camp fire	Age range: 12 - 14	45 min	Why it feels warm next to a camp fire. I know that warm air moves upwards and I can feel the warm air when I put my hand above the fire. When I'm sitting beside the fire I don't feel warm air moving past me. Nevertheless the camp fire somehow feels warm despite the warm air moving up and away from the fire.
17	Armfelt school	Salo	Finland	Big waves	Age range: 12 - 14	45 min	Why doesn't a big wave throw me on to the shore. I know that surfers can move with the wave and do all kinds of tricks. But when a big boat goes past when I'm swimming, I just move up and down with the waves. The waves don't move me on to the shore.
18	Armfelt school	Salo	Finland	Electricity	Age range: 12 - 14	45 min	Why the electricity can sometimes move through the air, but not always. In a thunderstorm the electricity can move through

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							many miles of air with the lightning, but at home it can't even jump a few inches from the electricity outlet to my finger. I know that both of these can still kill you even though the electricity from the electricity outlet can't move through the air.
19	Armfelt school	Salo	Finland	Hurting ears	Any	45 min	Why does it hurt in my ears when I dive deep into the water. The pain seems to go away when I swallow underwater, but it comes back no matter which way I continue, up or down. Why does it hurt in my ears to go back up to the surface of the water, even though it did not hurt to be at the surface of the water before I started to dive?
20	CSG Liudger.nl	Waskemeer	The Netherlands	rescue voertuig	15		Students design a rescue vehicle you can use on festival grounds. Students have to think about what a festival terrain looks like and consider what kind of accidents often happen during a festival and how to get people into safety quickly. They have to design thier own vehicle and think about the recuirements. Students can use 3D printing or a laserbox to make a model of their vehicle

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
21	De Ark, Sint Elooiswinkelstraat 59	Roeselare	Belgium	My kitty/pet is stuck and has a hard time being redeemed. Nevertheless, I would like to supply them with food from time to time. How do I do this?	10-12	6	The idea is that I can do this by creating a cableway that leads to my kitty. All kinds of materials are available: gears, ropes,…. How do I make a pulley (bicycle wheel is a little too big)? After creating it, the cableway can be steered in such a way that the food reaches the cat. It's a bit like how people in the south who live in apartments, hang up their laundry and let it dry by sliding the laundrey threats around a pulley. It can also be done with a small motor or a system of your own devise.
22	De Notelaar	Oedelem	Belgium	Transporting water from one place to another place	10-12	6	Water is precious. Storage and distribution is often a challenge in many places on earth. Find a way to efficiently transport water automatically over a long distance.
23	**De Wijzer – Ieperstraat 2a.**	Zonnebeke	Belgium	Design a Rube Goldberg machine in which at least 4 different	10-12	6	A Rube Goldberg machine is a complex design in which one can perform a very simple task unnecessarily slow and indirect. In the process, different elements (balls, tin cans, rope, seesaw) are constructed in such a way that triggers a chain reaction that ultimately reaches its goal at the end.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				scientific concepts are integrated.			
24	**De Wijzer – Ieperstraat 2a. -**	Zonnebeke	Belgium	Design a nice and functional cup holder that one can hang on its schooldesk.	10-12	6	Drinking water is very important for humans. Drinking bottles are often no longer on school desks because they can tumble of the table. From a social need, the idea arose to efficiently attach drinking bottles to school desks so that they no longer tumble of the table, but are still accessible to the children.
25	Department of Kazlu Ruda Kazys Grinius gymnasium Kazlu Ruda primary school	Kazlu Ruda	Lithuania	The Aviation	Primary school		Aviation is a part of our lives. We can reach another country in a matter of hours. Are you interested in the first planes? Let's do it. Take a look at the first planes in your country or another country. And join the challenge. Task: Calculate the scale of the selected planr to construct it. The plane must be made from secondary raw materials. Challange: The constructed aircraft must be in the air for 5 seconds. It must be strong so that it does not break when dropped.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
26	Dr Mollercollege	Waalwijk	The Netherlands	Design a model for a renaissance inspired building	16		The students have to work with architecture principles from the renaissance. So the proportions have to be very precize and according to 16th century standards. They must make a model of a building, with cardboard, wood and maybe clay or something. These students are art students, so some of them only have 'wiskunde C' (don't know if you know about the Dutch math system but that is basically math 1.1) so making a model from 2d cardboard to 3d shapes in the right proportions is really difficult for them.
27	ETS "Nikola Tesla"	Belgrade	Serbia	Show Me The Music	11-14; 15-18	6	This task should encourage students to express themselves via sound and light, based on their knowledge of mechanical and EM waves and their applications. Students will build a Tonoscope (a mechanical device that produces a visual form of an audible sound) and a laser pen microphone which will be used in workshops. During the workshops, the presence of various types of waves will be displayed in real life so that students can understand their relationship to the substance. The project aims to focus on waves but there are

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							so many other elements of learning present which include inquiry-based learning, problem-solving, collaboration, communication, independent learning, and more.
28	ETŠ "Nikola Tesla"	Belgrade	Serbia	The Sound of Music	16	6	Students will be able to understand the concept of the sound waves and explore the principles and the basics of the music instruments specially when it comes working principle of wind instruments. Student will be able to understand how instruments can transfer emotion and the idea through means of sound waves. One basic activity will be creation of the wind instrument based where students will be able to work with standing waves and harmonics. After the activity they will capture sound produced by the instrument and find its

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							resonant frequency in the very Basic means of the Helmholtz Oscilator. In the end students will write simple lab report in a form predefined by the Teacher.
29	ETŠ "Nikola Tesla" Niš	Niš	Serbia	Sunflower	Age range: 15-18	6	The task should encourage the students to construct a sunflower-shaped device in 3D that would orient itsekf towards the Sun. The students need to use a 3D printing/makerspace in their schools to produce different parts for the sunflower.
30	FRANCISCAN HIGH SCHOOL	KRETINGA	Lithuania	Make multicolored jewelry from wool	10-14 years		The aim is to find out how to dye the wool with different natural colors and to make a handmade jewelry for mummy (mama, not an Egyptian dead one). We can find a lot of natural dye surrounding us. After having different colors of wool, the pupils need to think about the techniques making various forms of beads. They should draw the sketches before making the jewelry learning to combine various sizes, colors and forms of beads. At the last period of work, the pupils can make an exposition for school community.
31	Gimnazija Zaječar	Zaječar	Serbia	Rolling STEM	14 - 18	6	Physics and math are very closely related to music. Challenge your students to try and create their own musical instruments and explain how

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							they work using physics and math. it can be simple as pan's flute, or xylophone, or more complex such as ARDUINO based piano, "soap box" guitar or other synthetic music instrument. Remember it is important not jsut to create but to explain how does it work.
32	Gimnazija Zaječar	Zaječar	Serbia	SuperSTEM	It can be done by any age group	6	Power of comics is getting greater and greater. Design a superhero /superheroine that solves problems/ fight crime/ saves the world using STEM as his/her main power. Try to focus on educational part and help readers learn something through reading of your comic book. In each storyline of your hero/heroine adventure you must include a part of any STEM lesson.
33	Gimnazija Zaječar	Zaječar	Serbia	STEM JAM	15 - 18	6	Making jam is not that easy technological process. Find out more about this craft and explain the role of chemistry and physics in creating a jam. Choose some unusual flavor like banana or carrot. Find out more about pectin and which fruits and vegetables are rich in it. What is going on in process of jam making, why is sugar good for conserveness, and finally use art to create a uniquely designed jar. Discover more about costs of production and create and business plan.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
34	Gimnazija Zaječar	Zaječar	Serbia	STEM paparazzo	15 - 18	6	Reality and gossip shows are getting more and more popular. We all heard of Big Brother and Survivor, but there are also more educational reality TV like MythBusters, Rough Science or Assembly required. We would like you to create an imaginary TV / Web show that focuses on famous scientist. It can be a gossip show about anecdotes from scientist's life, or a sketch show, but in each case at least one part of lesson must be included in it. It can be an experiment, a theorem, a way to solve problem or similar but it MUST be educational.
35	Gimnazija Zaječar	Zaječar	Serbia	Post it	Age is not important and task can easily be modified for any age group	6	The classrooms almost always use same boring posters. Design a better poster that emphases on STEM and helps students learn more about any of STEM subjects. You can draw it by hand, design it on computer, or create a collage. But each poster has to have one law, theorem, or method used in STEM in order to be educational as well as pretty.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
36	**GO! BS De Ring Groenstraat 174**	Roeselare	Belgium	Design a floating farm	10-12	6	Global Warming has its consequences. Especially problematic is the rising of the water level of the oceans. So in the future there will be less land available and we will have to learn to live on water. We will also have to grow our vegetables on the water. But how do we do that? We build a prototype of a floating farm, that provides us with food supplies, when there is not enough land. The farm must be anchored to the bottom of the ocean. In doing so, pupils take into account the effect of the tide. Pupils also have to make sure that the farm can survive a storm at sea (stability issue). High waves may also not hit the farm and make it unusable. They also need to provide a way to have drinking water on their farm. (collecting precipitation or purifying seawater).
37	Goethe University Frankfurt	Frankfurt am Main	Germany/The Netherlands	Taking back the streets	9-12		This task should encourage students to ask themselves what they need to get safe, healthy and with their needs to school, friends and other locations. The idea is basically to give them a gps-based phone with a camera. At first they take pics of situations on the streets they find dangerous, not practical, exclusive, but maybe also helpful, children-friendly and good for the

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							enviroment. In the next step they put the photos and gps-data together, so there will be a map. Afterwards they design alternatives and also formulate demands for poltics. So their project can be submitted to the city and be dicussed. This allows the students to learn to participate and also to evaluate their work on demands with the society.
38	Goethe University Frankfurt	Frankfurt am Main	Germany/The Netherlands	Tracking wild life at school grounds	9-16		The idea is that students get cameras (Night vision and motion detectors) to detect the life of wild animals (Rodents, Mammals, Birds, Insects) and to understand how the school grounds are part of nature. Also they will map the habitats and movements of the animals, so they can track changes, dangerous locations and safe spaces. Afterwards they can design the animals with 3D-printer or wood laser cutter and put information together, so other ppl can be informed about the habitats and maybe keep distance. Also the students can discuss and design how the school grounds can be more enviromental and animal friendly, without putting the students in danger. Maybe there is also the possibility to plan and make a garden or extend the field around the school grounds.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
39	Goethe University Frankfurt	Frankfurt am Main	Germany/The Netherlands	Digital Architecture	16+		This idea is based on the project of 'Forensic Architecture' founded in UK 2010. The idea is to use data (as video clips, broadcasting, articles, maps, ...) about a situation, where something like an accident happened. For the students it should be something which is not traumatizing, as a fallen tree after a storm or a fire without victims. With the collected data they recreate the situation digital. Afterwards they discuss how this method can be helpful in society and where it can be used, but also where there is a danger of collecting so many personal data through different technologies and how it can be prevented. If 18+ it should be discussed the work of the group 'Forensic Architecture' and why they do their work at the greek-bulgarian-turkish borders and why they submit their digital recreations to the human rights court.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
40	Grammar school "9.maj"	Nis	Serbia	Morse me	14-19	6	This task should encourage students to create their a kind of MORSE PHONE using BBC micro:bit. Morse code was invented in 1836. that is much more earlier before texting! Morse code only transmits one sound, so the alphabet is turned into combintations of short and long beeps. Similar to this, BBC micro:bits can't send voice messages, but they can send simple radio messages. This allows lots of micro:bits to talk to each other! In this task sudents should program micro:bit to send signals from one micro:bit (dot or dash) to any other micro:bits and make a handy translation code book that holds the BBC micro:bit with space to write down messages. Subjects covered from STEAM areas: Computer Science, Informatics, Programing, Computer systems, Computer networks. Topics: Binary code, Programming, Communication. Art: Craft, Design, Printing.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
41	Grammar school ,,9.maj"	Niš	Serbia	Our cell isn't invisible!	15-17, whole class	6	Cells build our body, but can we build a cell? This activity should encourage students to create a 3D cell - practicing the application of knowledge, planning, costume design and imitation of cell parts. Students should use their skills to create costumes that are based on the appearance of the cell and its organelles, which they have got familiar with in class, to imitate parts of the cell and finally to perform the way the matter is transported across the cell membrane. The performance will be done for other students of the school and recorded via drone in order to give the impression of observing the cell through a microscope. The main objective of the project: By the end of the project and the performance, the students will have revised the physiology and the morphology of the cell and its organelles in a creative way through model making and a role-play activity.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
42	Grammar school ,,9.maj"	Nis	Serbia	Planetarium	15-18, whole class	6	This activity should encourage students to create 3D Solar system applying the previously learnt facts, planning, model design and constructing the Solar system. Students develop the skills of constructing planets from natural materials, respecting the ecological principles of recycling, the skills of spatial organisation through the placement of planets in the hallway, respecting the relationship between the size of the planets and their mutual distances. By placing the models of the planets with QR codes below them, the students will provide all other students with the necessary information, improving their digital competencies at the same time. The main objective of the project: By the end of the activity, students will have creatively revised the general characteristics of the solar system by making models of the planets, as well as setting up the entire structure of the solar system.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
43	grammar school Svetozar Markovic	Nis	Serbia	E garden - educational, experimental and electronic garden for all	students from 14 -18 years	6	The idea of the project is to create a database of plants that are in the school garden (or any other garden or park near school or any other park in your city) and to present them on a site created just for that purpose. The site should be connected to the school site with a link so that students and teachers can access at any time. The database will contain descriptions of plants, their medicinal properties, descriptions of experiments examining the properties of chlorophyll or metal content, etc. colors, etc. All this can be used during the teaching of biology, chemistry, physics, ecology or art to give a visual representation of leaf structure, color or shape and dimension in the environment. In front of the garden (or in the park)we will place a large poster panel with QR codes whose reading opens a pages on the project site where you can read the description of the plants and research done so far on the specific plants. Plant research can be upgraded during classes of various subjects and presented publicly so that everyone can follow the results.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
44	Grigiskiu "Sviesos" gymnasium	Vilnius	Lithuania	Growth model of the common oak	12 - 15 year		The activity will deepen students' knowledge of biology, physics, mathematics and history. They will develop competences in creativity, initiative and cooperation. They will learn about the growth cycle and biology of the oak tree. They will visit the oldest oak tree in Lithuania, the Stelmužės oak tree, learn about its history and legends. They will get to know about the Lithuanian ancient woods (Sengire forests) their importance for nature and the reasons of deforestation. They will learn to tell the time by the position of the tree's shadow. They will use the size of the shadow to calculate the height of the Sun above the horizon. Pupils will use recycled materials to construct an oak tree growth model. They will use the model to calculate the volume and area of the canopy layer. They will use these calculations to work out how much oxygen a tree can release on average per day.
45	GSG Guido	Amersfoort	the Netherlands	Digital storytelling	Age range: 12 - 14		Create a digital story in Scratch by using appropriate English grammar rules and words. Hence, it is a combination of Computational Thinking and English. First, students are asked to construct a storyboard. They then program

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							the story in Scratch and create voice-overs with corresponding audio. Students work in groups of two (or three). The project can be carried out on in different ways depending on the level of English of the students. In addition, students can be asked to include interactions into their digital story to make it more challenging.
46	GTS Neimar	Nis	Serbia	Aliving the school environment with Fibonacci sequence and golden ratio design	16-19	6	The goal of the project is to imprint the natural design into the school environment using the golden ratio and Fibonacci sequence coding. As a secondary level technical school that educate pupils in the field of Architecture, Construction, Civil engineering and Geodesy, our main proposal for project strategy would be as follows> - 1. Using geodetic field equipment, survey with your pupils the outdoor area that needs restoration/beautification/renovation/etc. - 2. Create digital plan of the area using the available software - 3. Determine design that you would like to incorporate into the area and draw it onto the digital plan - 4. Extract coordinates of the drawing and then

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							use geodetic field equipment to stake out the design - 5. The last stage would be to fill/pave/paint/decorate/etc the marked design and thus turn the virtual into physical reality For schools without geodetic equipment, but that have CNC and/or 3D laser printer, the projected design could be sprayed/painted/filled onto the interior or exterior wall/school yard by using the printed pattern board (mold or matrix for the design pattern).
47	High School May 9th	Nis	Serbia	Chemical bonds- Atomic passion	14-17	6	Grab any subject, spice it up with your imagination, tide up with science and make chemical bonds! Task prod students to form and display the construction of chemical bonds between atoms and molecules(we suggest: a polar covalent bond, non-polar covalent bond, ionic and hydrogen bond). They should pay attention to two things:

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							chemical rightness of construction of chemical bonds and angles between atoms and molecules. They suppose to use various materials and geometric knowledge to create the shape and molecules geometry.
48	Jieznas gymnasium of Prienai district	Prienai	Lithuania	Healthy chips	10-14 years		Potato snacks appeared on shop shelves 10-15 years ago, and the food industry has notably moved forward since then. Modern chips are made of special and unhealthy chemical cooking material composed of plain wheat flour and modified soya product. Nowadays people tend to choose healthier chips. Many believe that a product marked with an ECO sign is good for health. Not always so. Chips can be the adequately balanced snack based on principles of healthy eating. Let's make healthy chips.
49	Jieznas gymnasium pre-school education department	Jieznas	Lithuania	Grow a garden in a jar	4 - 6 years		Take three 1l. capacity jars. Leave one original color, the other paint with black paint, and the third you cover with foil. You cover the bottoms of the jars with stones, pour sand on them, pour a layer of earth on the sand, plant the selected small plants and water them. Then close the jars and put in a bright place. You are watching the

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							natural water metabolism going on. Plants pump water from the ground. Through the leaves, the water evaporates, settles on the wall of the jar and reaches the ground again. How does the different light transmittance through the walls of the jar affect the water exchange? The goal is to keep the plants from growing in at least one jar.
50	Juozo Tūbelio progymnasium	Rokiškis	Lithuania	How to repay the debt to the forest?	7 - 14 years		Predicts how many secondary raw materials will be collected per week, how many trees will be preserved per month. Anticipate the ecological and economic benefits. Using the collected materials (from the store, newspaper editorial office, home, school), progymnasium students will create 5 - 15 ideas where they can still be used. Once a week, we will weigh, count, compare, plan what and how to make out of paper. Solve the problem of where to load the wrong paper or cardboard. How to promote ecological thinking? The groups will produce tools for games and learning, and will invite other students to help. Make a diagram of how still the debt can be repaid to the forest. He will photograph his and his friends' activities and create a digital book.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
51	Jurbarko Naujamiescio progimnasium	Jurbarkas	Lithuana	Vertical plant wall	10-14		Create a dimensional drawing of a vertical wall through integrated information technology and art lessons. To make a vertical wall during the technology lessons, to choose spices that match each other according to the growing conditions, species and colors during the biology and art lessons. Planting seedlings during this challenge. At the end of the challenge, use the cultivated plants during technology lessons for food production to share with nursing homes. Sustainability, ecology, STEAM. The aim of the project is to introduce students to the variety of herbs. The objectives of the project are to design a vertical plant wall, to plant and maintain plants, to get acquainted with the variety of herbs, to get acquainted with ecology and sustainability. Continuity of the project - the project can be repeated with plant seeds and other plants. Can be repeated in different classes. Project materials - for the wall: wooden boards or plastic trays, fasteners, earth, plant seeds or seedlings.
52	Kaisiadorys Algirdas	Kaišiadorys	Lithuania	One million euros	12-19		One million euros must be used by a team of five members for these purposes: to buy a house and a vehicle, to plan one trip, to

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
	Brazauskas gymnasium						allocate funds for studies and invest the remaining money. For accomplishing the idea all educational areas of STEAM are used.
53	Kaišiadorių r. Žiežmarių mokykla-darželis "Vaikystės dvaras"	Žiežmariai	Lithuania	COLOURS FROM NATURE	3-8 years		Your challenge is to discover 3 or more different colours using plants from nature. Discover 3 or more different colours and as much as it possible paint (dye) shades from plant using different paint (dye) making techniques and explane how they get this. Use the finished paint (dye) to create a creative work on the selected fabric (material).
54	Kaunas district Šlienava basic school	Kaunas district, Šlienava	Lithuania	Grow a salt or soda crystal.	Grades 1-4		Materials: thicker twisted wire or chenille wire; pencil or stick; jar, no greater than 0.5 l; water; salt or soda. Make any shape from the wire and tie it to the pencil with a thread. Preparation of the aqueous solution: add a lot of salt or soda to the boiling water and stir until dissolved. When the soda or salt no longer dissolves, immerse the wire in a hot solution. The pencil must be on top of the jar or wire. Wire must not touch the edges or bottom of the jar. It remains to wait and watch what will happen.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							Ask students where people use soda or salt in addition to food.
55	Kaunas Gediminas Sports and Health Promotion Gymnasium	Kaunas	Lithuania	The bread of the world	12-15		Analyze the variety of bread and its products in the country, get acquainted with the grain used in bread production, remember bread-related customs (while reading texts, listening to stories), draw bread using different techniques, distinguish different forms, compare recipes and nutritional values of different bread products, apply the selected recipes for making different organic bread products and taste them.
56	Kaunas primary school-kindergarten "Šviesa"	Kaunas	Lithuania	The slowest melting glacier	From 3 to 7 years		Create the slowest melting glacier. Using at least five different shapes of recyclable materials, create the slowest melting glacier where different objects are frozen. The glacier must be made of real ice. Observe and record the melting process of the glacier.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
57	Kauno Jono ir Petro Vileišių mokykla	Kaunas	Lithuania	Create a model presenting the lifestyle of the Stone Age people.	7-9 years.		To examine visual and textual information about the lifestyle of the Stone Age people - housing, tools, weapons. Learn and understand how people's life changed at the beginning and the end of this century. When the research is completed, pupils apply the gained knowledge practically. Selecting and using the materials of their own choice pupils do learn to set the fire, construct the tools and weapons, create prevailing clothing style and jewelry of those days. Pupils also assemble the dwellings of the Stone Age inhabitants, draw the pictures found in the caves. The final result would be the model of a lifestyle of the Stone Age people. To reinforce the gained knowledge throughout all learning process pupils, create the Double Bubble mind map, showing the similarities and the differences between the present and the Stone Age period.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
58	Kauno mokykla-darželis "Šviesa"	Kaunas	Lithuania	Live as sustainably as possible (making a shopping bag).	7-10		The task is to find a solution to reduce waste (recycling) by analysing the amount of waste produced by the school community. It‘s time to be concerned about the health of the planet. As part of a sustainable fashion challenge, using STEAM elements, create a shopping/sneaker bag out of discarded T-shirts. Activity options: Topic: new season. Check out your wardrobe and choose the clothes you've outgrown from the previous season. Estimate (weigh in kg, name in units) how many clothes no longer fit. Explore statistical data. Add up numbers, kilograms, draw conclusions. Rain of ideas/discussion. What to do? How can we reduce the amount of clothes we no longer need? Are these clothes really no longer needed? Sustainable fashion. Making good use of outgrown t-shirts - turning them into a shopping/shoe bag. - Analysis of the composition of the fabric: to

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							find out which materials (natural (linen, cotton, wool...) or synthetic (viscose, spandex, polyester) the T-shirt is made of, their properties). Which fabrics would you recommend? Why? Why is it recommended that young children wear only natural fibre clothing? Fabric characteristics of a tracksuit. - Material yield - production. Finding information on how the fabric is made. Which materials require more energy resources? Which take longer to decompose? Which materials are more harmful to our planet? How can we help? - Making a basket according to the instructions given. Decorating the bag with the tools of your choice (buttons, broken necklaces, embroidery, markers, crayons).
59	Kauno mokykla-darželis "Šviesa"	Kaunas	Lithuania	Live as sustainably as possible (making a shopping bag).	7-10		The task is to find a solution to reduce waste by analysing the amount of waste produced by the school community and designing a recycled solutions. As part of a sustainable fashion challenge, using STEAM elements, create a shopping/sneaker bag out of discarded T-shirts. Analyse the composition of the fabrics, select the most suitable. Search for the information of

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							their making, energy requirements. Which materials take longer to break down? Which materials are more harmful to our planet? Decorate the bag with the tools of your choice (buttons, broken necklaces, embroidery, felt pens, crayons).
60	Kindegarden "Volungėlė"	Alytus	Lithuania	Make the best nest for birds	4-5y		Exploring the structure of a bird's body, students have to create a nesting box that is most suitable for the bird species of their choice. It is recommended to use selected construction materials or recycled materials to make a nest for birds.
61	Kindegarden "Volungėlė"	Alytus	Lithuania	Make a nest for birds	4-5y		Make a nest for birds from selected constructors or secondary raw materials. Pay attention to the size (there must fit the birds with the nest), the hole in the nest.
62	Kindergarten „SMALSUTIS“	Dembava, Panevėžys district	Lithuania	How to make own device?	3-6 years		Children choose what devises they want to make. They can explore real devices and their diversity. For this task they need secondary raw materials. These devices must be 3D format and decorated. How to make that device „work"? Capture how it goes.
63	Klaipėda Baltija Gymnasium	Klaipeda	Lithuania	Designing and	14-16		Implementing this task, pupils will produce educational material for exact sciences. Students, using projection programmes or

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				producing solid figures			drawing shapes of the figures, will design models of the solid figures (cube, rectangle, pyramid, cylinder, cone, sphere and etc.). Choosing one material (paper, thread, wood, metal, plastic, rubber and etc.) will make a solid figure. Applying knowledge of natural sciences and exact sciences, students will count the surface area, volume of the produced solid figures, will analyze physical and chemical features of the used materials, will revise definitions in English language. During activities students will improve skills of recognitition, creativity, ability to learn and engineering.
64	Klaipėda University „Žemyna" gymnasium	Klaipeda	Lithuania	Create an artistic exhibition using secondary raw materials	15-17		The usage of sustainable materials for creative activities in mathematics lessons for creating artistic compositions.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
65	Lietuvos kurčiųjų ir neprigirdinčiųjų ugdymo centras/ Lithuanian Educational Center for the Deaf and Hard of Hearing	VILNIUS	Lithuania	„KINDERGARTEN IN THE AIR“	5-10		This assignment should encourage kids create future kindergarten in 2D and/or 3D format. This kind of kindergarten is supposed to be at least 1 meter above the ground (no contact with ground is allowed) and remain in the air. While creating future kindergarten building, parts of it should be designed from secondary raw/recycled materials, natural materials also rely on the laws of physics. Try to use engineering solutions where possible. Demonstrate/explain how this building will raise and how it will remain in the air. Using various skills visualize daily life in the future kindergarten.
66	Lithuanian Educational Center for the Deaf and Hard of Hearing	VILNIUS	Lithuania	Kindergarten in the air	5-10		This assignment should encourage kids create future kindergarten in 2D and/or 3D format. This kind of kindergarten is supposed to be at least 1 meter above the ground (no contact with ground is allowed) and remain in the air. While creating future kindergarten building, parts of it should be designed from secondary raw/recycled materials, natural materials also rely on the laws of physics. Try to use engineering solutions where possible. Demonstrate/explain how this building will

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							raise and how it will remain in the air. Using various skills visualize daily life in the future kindergarten.
67	Lithuanian Sports University Kedainiai Ausra Progymnasium	Kedainiai	Lithuania	‚From a tiny seed to a flower‘	7-12 years old pupil		Choose different seeds from 5-6 flower species. Observing the flower cycle, determine the best conditions for each species: the effect of temperature, sunlight intensity and humidity on the growth of the flower plants. Students will observe, smell, touch and admire the flowers. During the project, the young florists will collect, organise and present to their classmates information about the flowers in their group. Each week the pupils will measure the height of the plant and record these measurements on charts in Word. In integrated art and music lessons, pupils will create fractals in which they will find and colour the blossoms of future flowers. An exhibition of the pupils' fractals, "Blooming...", will be organised in the Gymnasium. At the end of the project, the young florists will share their experiences at a mini STEAM conference. The pupils will decorate their homes with their own flowers.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
68	Lopšelis-darželis "Boružėlė"	Alytus	lithuania	UNDERWATER WORLD. How pressure works	4-5 years		It's a simple and fun way to teach kids about density and how it affects whether an object will sink or float. As the utensil is compressed, the water pressure squeeze out the air bubble. It is an individual creative process of depicting the underwater world. Also general observation as the object moves. Using secondary raw materials (bottles 1-2l) create your own underwater world and watch the diver and the fish move with the help of pressure. Expand your learning.Put more than one diver or fish in your bottle at a time - What happens? Test your diver in both a 1 liter and 2 liter bottle. Do they both work the same way? What happens if you fill a large bottle with half water and half oil? Does your diver work the same way?
69	Montessori College Nijmegen	Nijmegen	Netherlands	Using physical computing to save energy/water	12-18		Use physical computing (i.e. Micro:Bit) to help save natural resources (i.e. energy/water). Students should choose an problem, identify how they contribute to the problem in their every day lives, and propose a solution to help build awareness on how to minimize their global footprint. An example is a using a light strip with timer to indicate how long/hot a

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							shower has been taken. Students incorporate knowledge from chemistry/physics/biology/math/(ComputerScience) classes and use a 3D printer to create a protoype solution.
70	Montessoricollege Nijmegen	Nijmegen	Netherlands	Phyiscal computing to promote active behavior	12-18		Use physical computing (i.e. Micro:Bit) to promote active behavior. Students should identify how they could be motivated to move more in their every day lives, and propose a solution to help build awareness and motivate an active livestyle. An example is to register movement, after too long idle time playing a music that must be danced that won't stop until enough movement has been made. Students incorporate knowledge from chemistry/physics/biology/math/(ComputerScience) classes and use a 3D printer to create a protoype solution (i.e. a watch band).
71	Montessoricollege Nijmegen	Nijmegen	Nederland	Investigate variables effecting sustainable ecosystem	12-18		Build a mini-ecosystem (i.e. terranium) and use physical computer (i.e. Micro:bit, arduino) to measure and investigate adequate levels of light, water, temperature, etc or the impact of removing one or adding in pollution on the growth/lifespan of plants/insects. Students incorporate knowledge from

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							chemistry/physics/biology/math/(ComputerScience) classes.
72	Montessoricollege Nijmegen	Nijmegen	Netherlands	Physical computing to research pollution	12-18		Set up a physical computing system to measure different types of pollution (i.e. air, noise) on the schoolyard on weekdays and weekends. Survey traffic on both types of days. Find and report on correlations. Students incorporate knowledge from chemistry/physics/biology/math/(ComputerScience) classes.
73	Montessoricollege Nijmegen	Nijmegen	Netherlands	Physical computing to warn for harmful situations.	12-18		Build a system that warns children for harmful situations: i.e. Use the micro:bit to measure time and brightness of (sun)light exposure, warn with sound/light when highly-exposed. Students incorporate knowledge from chemistry/physics/biology/math/(ComputerScience) classes, and use a 3D printer to create a prototype solution (i.e. a watch band).
74	Montessoricollege Nijmegen	Nijmegen	Netherlands	Drawings to remember passwords	6-18		Students make simpel (spirograaf) drawings to help remember passwords. The figures combined with number of edges/points/angles can be used to create a password. I.e. A circle with a right-angled triangle inscribed could help recall the password 1Circ1Tri306090. The

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							coding could be further extended using colors. The figure could also be printed with a 3d printer and made into a keychain so that they have it with them. This activity practices creative drawing, mathematics (geometry) as well as the idea of encoding. By repeating the excercise every 2 months students learn to change their passwords on a regular basis. Multiple keychains could be made for different passwords to make students aware not to reuse passwords (practice digital security).
75	Musninkai Alfonsas Petrulis Gymnasium	Musninkai	Lithuania	Pick a low income country or region in the world, investigate it from an engineer's, agriculture's, environment alist's, biologist's or from the other	11 - 19 years old		The rapid consumption economy is increasingly destroying the Indonesian, Amazon and other forests, ruthlessly cutting down trees and replacing them with palm or avocado plantations, highways connecting the jungle with loggers, and the locals fear not only for the preservation of their culture but also for their own safety. For instance, the harsh weather conditions in the Andes are unfavorable for the locals to grow plants and animals, which makes it much easier for people from large cities and villages to feed on the Amazon forests that do not belong to them. Locals (especially if they grew up in a small town) often have no

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				perspective, and design or redesign it's community center to solve social and economical problems.			education at all. Arbitrarily entering an area of land that does not belong to them, they cut down the forest and sell the timber illegally. Others cut down and burn forests only to (illegally) plant corn and rice. In the captured areas, the intruders hunt animals, birds, which will later be sold on the illegal market. Why is this happening and what can each of us do?
76	Musninkai Alfonsas Petrulis Gymnasium	Musninkai	Lithuania	Is it possible to make a gift to a friend from items and materials that can be found in the house?	6 - 11 years old		Creation of a gift: A friend's birthday is approaching. I would like to greet a friend, but I don't have the money and don't want to ask my mom. There is a variety of household waste at home. I will use them to make a gift. Means of production: Plastic bottles, paper boxes, threads, scissors, glue, wire, duct tape, paint, old newspapers and magazines. Step 1 Together with children, we predict what kind of flower to make using household waste? Which flower is faster and easier to make (plastic, paper or thread)?

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							What will make the flower the most stable, the most practical? Step 2 Children are divided into groups. One group will produce a flower from old newspapers and magazines, cardboard, rolls of toilet paper. The other group make it from plastic and polyethylene. Third - from yarn and various twigs. We observe photos and drawings of flowers. We discuss about flower blossoms, leaves, stems. We create a project implementation plan. Step 3 Cutting flowers from rolls of cardboard or toilet paper. Application from old newspapers or magazines. Cutting flowers from plastic or tying them from polyethylene bags. Production of flowers from twigs wrapped in thread. All flowers produced must be stable on the stem. Opportunities to expand and adapt to an authentic context It is also possible to make a flower from other

Funded by the Erasmus+ Programme of the European Union
NACIONALINĖ ŠVIETIMO AGENTŪRA
DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							materials available in the environment (buttons, fabrics, disposable tableware, etc.) Where is the challenge here? Have you ever wondered how you can make a flower from recycled materials?
77	Naujamiesčio progymnazium	Jurbarkas	Lithuania	What could we find in 1 m2?	7 - 10 years		By exploring 1m2 of a selected area of the earth's surface for 15 minutes and in this time students should to identify all living objects (plants, animals, etc.). Analyze date and prepare presantation.
78	Over Betuwe College	Bemmel	Netherlands	Tiny House project	11-14		In short, this project consists of three initial tasks: learning about 3D printing, coding and VR/AR. These tasks are integrated into a final assignment called Tiny Houses. During this final project students first investigate the requirements they have to meet, to call a house 'tiny'. After that they will design their tiny house using VR/AR. The tiny house has to include a multifunctional piece of furniture (3d printing) and a smart device (microbit-coding) that helps the world achieve one of the 30 global goals adopted by the united nations. If you would like more information please let me know.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
79	Paderborn University	Paderborn	Germany	climate chart puzzle	10 - 14	10 min	This task should encourage students to think about typical weather situations for specific locations. Students should think about impacts of locational differences, such as costal proximity, different climate zones or high altitudes of the city. By comparing these charts, the students use mathematical and geographical skills.
80	Paderborn University	Paderborn	Germany	Modulo "corner" calculating	10 - 16	10 min	This task should encourage students to calculate freely. To get the students engaged in calculating with modulo, an often-used utility in programming. On the one hand they train their mind calculating technique and they also learn how to handle a frequently used arithmetic operation. Students should use multiple pivot points as different modulo values. The number of pivot points should vary this can for example be achieved by going outside of the classroom. By moving around in class, the students get more engaged in the task.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
81	Paderborn University	Paderborn	Germany	Drawing through tracking	10 - 16	60 min	This task should encourage students to create own small drawings or figures, by tracking. By planning their route, they get involved with upscaling, ratios/ proportions and general forward thinking. They get involved with the GPS Tracking of their own device and thereby get to know how powerful such small thinks are. The students can track their routs by multiple different ways and thereby get to know different technical possibilities and workarounds which can be handy technique in their everyday life. Students get to know their close surroundings and neighborhoods.
82	Paderborn University	Paderborn	Germany	Generating symbols by coloring single cells	8-12	15 min	This task should encourage students to create known or new math symbols like “%” or just letters, to get involved with new symbols and to think about creation of symbol on a digital display. Students should therefore think about upscaling and ratios. Students get to know the principle of a digital display and thereby the function of a single pixel. Students can use pen and paper, excel, etc. The students create their own drawing and get engaged with different tools and possibilities, so they train their media competencies by “drawing”.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
83	Paderborn University	Paderborn	Germany	Generating symbols with programming output	12-16	25 min	The task should encourage students to get engaged with programming. The students use a programming language to create different symbols. They thereby learn about the programming language, get to think in new and additional ways about the symbol and its structure, because to create them the students must first decompose the symbol and then think about recreating in a creative way. As in the previously mentioned task the students also get to know the general working of a digital display in simulating pixels a part of their output. Another way of creating symbols could be with the turtle-library in Python.
84	Paderborn University	Paderborn	Germany	Writing a QR code	10-14	15 min	This task should encourage students to create an own QR-Code-esque picture, practicing calculating decimals to binary. Students learn how a computer works, by illustrating the different steps of converting: binary to decimal, decimal to letter and vice versa. Students should use many different types of words and maybe sentences they therefor can write the words vertically and add the specific black and white binary encoding next to the letter to create

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							the QR-Code-esque look. They can use digital support for the creation of the code or can make a basic code with pen and paper.
85	Paderborn University	Paderborn	Germany	Building our own Laptop, a puzzle	6-10	60 min	This task should encourage students to create their own paper laptop by matching the specific parts to each other. The students get to know the individual parts of a computer and therefor learn the basics of hardware with a first look at the specific tasks and responsibilities of the parts. The students also learn how to craft with paper and glue and thereby train their motoric skills. The students get a full set of parts for their laptop and small profile of each part where they get to know them. Also included is a manual for building their Laptop, which leaves space for own creative ideas in form of coloring and more.
86	Paderborn University	Paderborn	Germany	Understanding the procedure of basic program, a roleplay	6-10	20 min	This task should encourage students to get to know the inner workings of PC. The students get to know the different PC parts and their tasks and the cooperation of the different parts. The students get a perspective of how fast a PC is working to get a specific task done. The

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							student gets to reflect their own behavior to create a part of the roleplay (user / machine communication). The students get different roles as the parts, the user, and the narrator. It is required to be well prepared to get the students to easily perform their roles in front of the viewers (the other students). The roleplay acts as a creative way for the students to get involved with this hard to catch and generally dry topic.
87	Paderborn University	Paderborn	Germany	Ozobot color code riddles	6-12	10 min	This task should encourage students to get to solve path riddles with the Ozobot. The students get to think about the different options of solving the riddle and afterwards needs to color the specific boxes to communicate to the robot. The students get to know the robot and general functionalities of such robots. The riddles can also train the students in for example spatial imagination depending on the specific task. The students get a A4 Paper with the riddle, in which they need to color the blank boxes along

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							the way they think the Ozobot should take. The riddles can be more complex like use every route without using on path more than once or they could be easier like get to location. With their solution complete the Ozobot can get involved. The Ozobot is the indication of whether the task was correctly solved or not.
88	Paderborn University	Paderborn	Germany	The spontaneous calculating	6-12	10 min	This task should encourage students to get engaged with mental calculation. The students use the calculating to get a better feeling for the numbers and to generally strengthen their math skills. The special thing is the number generation. To keep it fresh and spontaneous the students get different settings from where they need to calculate without tools. For example: a Darts Leg from a video, from a random number generator or “wheel of fortune”. To spice up even more, you can combine two of the aforementioned things to create even more elaborated calculating tasks. For example: the wheel of fortune to decide the mathematical operation and the RNG to get the numbers, by

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							combing more than 2 numbers the tasks get even more difficult.
89	Petro Kuzmjak school	Ruski Krstur	Serbia	Origami Platonic solids	14-18	6	Students explore Platonic solids properties and model thought hands-on activities and paper folding-origami. Origami gives students various opportunities to explore information about polyhedron's area. Trough this activity students have a better insight of terms such as edges and vertices of polyhedron, and the outside and inside of polyhedrons. The concept of convexity and concavity can also be illustrated by making different polyhedrons by origami. Understanding of polyhedron's network allows easier understanding and solving geometrical problems. The student may view it from different angles and obtain certain conclusions.
90	Petro Kuzmjak school	Ruski Krstur	Serbia	Mathematica l meme	14-18	6	Make a meme based on mathematical content learned in previous lesson. Besides meme make

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							a following up presentations that will explain mathematics behind the meme
91	Petro Kuzmjak school	Ruski Krstur	Serbia	Poetry inspired by math	14-18.	6	In order to write a mathematical poem students need to profoundly understand mathematical concepts. This task requires to make poems inspired by mathematics. Metaphors should connect real life with mathematics. For example, sin function could represents ups and down in life, or parallel lines could represent two life paths that never meet.
92	Petro Kuzmjak school	Ruski Krstur	Serbia	Dancing Euclidian geometry	13-16	6	Students present Euclidian geometry content like axioms or theorems by dance. Each representation should be followed up by video and short description that combine mathematics and artistic expression.
93	Petro Kuzmjak school	Ruski Krstur	Serbia	Mondrian art and mathematics	14-18	6	Students explore Mondrian's art in order to learn more about geometrical shapes. The task's products should connect Mondrian's art in mathematical content such as area, angles or some other.
94	Petro Kuzmjak school	Ruski Krstur	Serbia	Optical illusion	16-18	6	Students explore optical illusion from the point of art, mathematics, biology or physic. Students can chose one type or example of the illusion and connect to mathematical and scientific content.

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
95	Petro Kuzmjak school	Ruski Krstur	Serbia	STEM inspired 3D printed jewelry	17-18	6	Students create jewelry pieces inspired by some scientific concept. The final product is 3D printed creation. Each product should be followed by description of connection to STEM.
96	Petro Kuzmjak school	Ruski Krstur	Serbia	stAR-T	13-17	6	Students explore constellations from mathematical and physic point and use the learned content as an art inspiration. Final products could be pictures inspired mathematical or physic concepts. Each product should be followed by mathematical or physic description of the concept.
97	Politehnika - škola za nove tehnologije	Belgrade	Serbia	Drawing Robot	12 - 18	6	Main construction of the robot is made of parts printed on 3D printer. Control and motors are parts of Lego Mindstorms EV3 kit. This robot is constructed for writing and drawing on surface whitch it is moving on. It can be used for art and technical drawing. Students will write program and use this robot for drawing shapes that are given to them, and with sufficient practice they will be able to draw free shapes they want. All constuction plans for building this robot and tutorial for building it are part of the project material.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
98	Radviliskis Vincas Kudirka's progimasium	Radviliskis	Lithuania	Future train	6-10		Create a moving (from place to place) future train. Recommended using recycled materials, Lego-constructors, 3 D printer or others.
99	Radviliskis Vincas Kudirka's progimasium	Radviliskis	Lithuania	Roll, rumble, fly...	6-10		Build the train of the future using secondary raw materials that could move from the place.
100	Radviliškio Vinco Kudirkos progimnasium	Radviliskis	Lithuania	Cherry on the top	13-18		We invite students to get acquainted with the latest trends in cake decoration and create an exclusive sweet layout. To successfully complete this task, you will need to draw on knowledge of mathematics, art and technology, and science. You will make rolls of roll or rectangular parallelepiped shapes from the materials of your choice. After calculating and preparing the tiles of a roller or rectangular parallelepiped and constructing the layout, you will decorate it with the means of your choice, you will learn to choose colors, different sculptural forms. As you experiment, you will learn how to extract paints of different colors from natural materials and secondary raw materials.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
101	Raseiniai district Vidukle Simonas Stanevicius Gymnasium	Vidukle	Lithuania	To create a sailboat and to find out what size and shape of sails will help the boat sail faster	4-5 years old		Design a sailboat using materials in the environment, identifying which (at least 3) energy sources make them move. Find out which ones affect them the fastest.
102	Raseiniai district Vidukle Simonas Stanevicius Gymnasium	Vidukle	Lithuania	To create a sailboat and to find out what size and shape of sails will help the boat sail faster	4-5 years old		To create a sailboat children use paper, sticks, sponge, egg packages, corks,old magazines and newapapres. Children use everything, what they can find at home. Children have to: -either draw or take a pickture of the sailboat; -to describe, what shape and size of the sails has been chosen; -to describe, what they have learnt in the process.
103	Raseiniai district Vidukle Simonas Stanevicius Gymnasium	Vidukle	Lithuania	Using recyclable materials to built a house. The house has to	7-10		Only the students work on this project. Students use all possible recyclable materials. The house has to have a base, walls, windows, a dor, a roof.

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				be as tall as a student.			
104	Raseiniai Saltinis progymnasium	Raseiniai	Lithuania	Find out if toothpaste protects your teeth	7-11 years		Make an experiment.: Dip three untreated eggs and three eggs carefully and thoroughly covered in toothpaste into three different liquids (vinegar, black tea and coca cola) and keep for two days. After two days, discuss the results and answer the challenge question: "Does toothpaste protect teeth?"
105	Rokiškio Senamiesčio progymnazium	Rokiškis	Lithuania	To design the space of school patio: outdoor classroom	6-10 grades		To design an outdoor classroom in the school yard. To do patio measurements, to create an outdoor classroom plan with its dimensions. To create outdoor classroom equipment choosing colours, stylistics and materials depending on weather conditions, ecology and sustainability. To construct an outdoor classroom model in 2D or 3D format. While performing the task, students will deepen knowledge of mathematics, IT, arts and technology, will improve competences of creativity, cognition, critical thinking, communication and cooperation in a group.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
106	Rokiškio Senamiesčio progymnazium	Rokiškis	Lithuania	Design the space of school patio: outdoor classroom	13-17		To design an outdoor classroom in the school yard. To do patio measurements, to create an outdoor classroom plan with its dimensions. To create outdoor classroom equipment choosing colours, stylistics and materials depending on weather conditions, ecology and sustainability. To construct an outdoor classroom model in 2D or 3D format. While performing the task, students will deepen knowledge of mathematics, IT, arts and technology, will improve competences of creativity, cognition, critical thinking, communication and cooperation in a group.
107	Rokiškis nursery-kindergarten "Varpelis"	Rokiškis	Lithuania	How and from what to make a rhythm instrument?	4 years old		In the natural world, music is everywhere. While children learn to play conventional instruments in kindergarten, they can feel an even greater connection to music by playing their own instruments, which can easily be made from recycled materials. The challenge: to create as many instruments as possible from recycled materials that can be used in the class musical band and create a performance.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
108	Rokiškis nursery-kindergarten "Varpelis"	Rokiškis	Lithuania	How and from what to make a rhythm instrument?	4 years old		Tools: rolls of toilet paper, coloured paper, pencils, scissors, glue, various grit. From the very first moments of life, sounds surround a person. In the natural world, music is everywhere. While children learn to play the usual instruments in kindergarten, they can feel an even greater connection with the music by playing with their own instruments that are easy to make from secondary raw materials. Task: to create a rhythmic musical instrument from secondary raw materials, decorate it and test it.
109	Rumsiskes Antanas Baranauskas gymnasium	Rumsiskes	Lithuania	Can peas grow "on the Moon"?	11-17 years of age (5-10 grades)		Plant peas under various conditions and measure the temperature, humidity and acidity of the soil and the insolation; observe and analyse the time of germination and speed of growth and development of the plants according to your chosen criteria (plant length, root conditions, etc.). (Different choise of plants is possible.)
110	Rumšiškės A. Baranauskas Gymnasium	Rumšiškės	Lithuania	Green windowsill	Green windowsill		Children will get to know the plants by exploring how they look, what they are growing up, what their species are. The researcher will measure and compare the seeds of the plant under an microscope. Children will sit, water, care for the plants growing in their pots and

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							record their growth process. The seedlings will then be transplanted into the field. Children will have the opportunity to constantly monitor their flowering, fruit growth, compared to other plants.
111	Rumšiškės Antanas Baranauskas Gymnasium	Rumšiškės	Lithuania	Green windowsill	4-6 years old		Will all the seeds germinate at once? What happens if we don't sprout? Which direction do the seedlings go? Together with the child we will discuss the conditions for seed germination and growth. We will sort, count, compare and memorize the selected seeds. We will paint the pots colorfully for sowing, we will make cards with an inscription and a picture so that we can mark the much sown. We will take care of the sown plants. We will monitor their germination and growth, measure and record them.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
112	School of Applied Arts	Šabac	Serbia	MAKING THE PERIODIC TABLE OF THE ELEMENTS	15 - 17	6	In this project task, students will create a Periodic Table of the Elements, with "their" chemical element / symbol, using knowledge of chemistry, art techniques, technical education and vocational subjects. Applying creative skills and principles of art, students will use different types of materials and techniques to make "their" element from PSE and, finally, through group work, arrange and combine all chemical elements / symbols into a whole - Mendeleev's Periodic Table of the Elements. This way, they will complete and deepen their knowledge of chemical elements, their symbols, periodicity and properties, and through various approaches to creating chemical symbols, develop imagination, thoughtfulness, precision, communication and cooperation. The main goal of the project is to create Periodic table of the Elements, while specific goals include other learning elements based on independent learning, problem solving, cooperation, communication - through drawing and creating ideas, making elements / symbols

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							in selected material and research on project sustainability.
113	School of Applied Arts	Šabac	Serbia	MAKING A 3D QR CODE	15-18	6	QR (Quick Response) code is a two-dimensional symbol that easily provides access to information via the Internet. It is made in the form of a template made up of many square surfaces that can be scanned by a camera on a mobile device and thus connected to websites or other sources of information. The project task instructs students to use an online application to create a QR code of the School of Applied Arts and then implement it in the form of 3D mosaics. This is an activity in which students, combining knowledge and skills from information technology, graphic design and practical work, using different materials and

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							tools, will design and transpose into a three-dimensional QR form at their own school. This way, they will complete and deepen their knowledge of the principles of modern communication, the use of modern technologies in everyday life, graphic symbols, aesthetic principles, and through the practical implementation of 3D mosaics and knowledge of modern materials and techniques, respecting the components of teamwork., joint decisions and taking responsibility. The main goal of the project is to create a QR code using the mosaic technique, but there are also specific goals based on research, communication, cooperation through the creation of conceptual solutions to the realization of the final product.
114	School of Applied Arts	Sabac	Serbia	Oxidation drawing (Banana tattoo)	5-18	6	School of Applied Arts, Šabac, Serbia Task name OXIDATION DRAWING (BANANA TATTOO) The task is designed to encourage students to, through the expression of their own creativity, get to know and apply the physico-chemical processes they observe in nature. Students will transfer their drawing or prepared

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							illustrations to the banana peel, via indigo paper, and then use the stinging technique to treat the surfaces of the drawing that should be dark. These dark surfaces are formed due to physical-chemical, oxidation-reduction processes on banana peel. Working on the task, students will, in addition to developing creativity, acquire and improve knowledge in the field of chemistry, natural physical and chemical processes and artistic expression. Oxidation drawing can be applied in various projects of advertising, branding, in general in marketing.
115	Siauliai Gytariai Progymnasium	Siauliai	Lithuania	Leonardo Da Vinci prototype parachute	14		In the sport of skydiving, a person jumps out of an airplane from a very high altitude, falls through the air, and releases a parachute to help the skydiver slow his or her way down and land safely on the ground. How does the parachute break the free fall so well? As the skydiver is falling, the force of gravity is pulling the person and his or her parachute toward the earth. The force of gravity can make an object fall very fast! The parachute slows the skydiver down because it causes air resistance,

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							or drag force. The air pushes the parachute back up and creates a force opposite to the force of gravity. As the skydiver falls, these "push and pull" forces are nearly in balance.This project will be integration of STEAM activities. In history lessons you will analyse historycal Leonardo da Vinci parachute appearance, in technology lessons you will create parachute series from small to big, in mathematics you will count figura area, in IT lessons we will apply our informatics skills , in physics we are going to experiment whether large parachutes will fall more slowly than small ones and how the fall speed will be affected by body mass or parachute material, in geography lessons you'll be measuring air temperature, and in art lessons you will paint the parachutes.
116	Sint-Idesbald	Roeselare	Belgium	Design your own rocket to aim to a meteorite that is approaching our earth.	10-12	6	In the event that a meteorite will hit our earth, we search for a way to divert it. Pupils will have to design a rocket and a rocket launcher to let the rocket fly in a certain angle in order to hit the meteorite.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
117	Slienava Primary School	Šlienava, Kaunas district	Lithuania	Day - Night	Primary education		Visually explain why the day changes at night. Any selected methods or materials can be used.
118	Slienava Primary School	Šlienava, Kaunas district	Lithuania	Capacious box	Primary Education		Make the box as capacious (spacious, roomy) as possible. Use only 3 tools: a 20x20cm cardboard or paper sheet, scissors and a 0.5 m narrow adhesive tape. Make the box as capacious as possible. Measure the capacity of the box with the rice groats. Fill the box with them and weigh how many grams it holds.
119	Sudervė M. Zdziechovski's basic school	Vilnius	Lithuania	The Eco Car is rolling	5-10		Students discuss the importance of ecology and ecological means of transportation. Based on the previuosly sketched model, using, previuosly collected recyclable materials, in groups students construct an eco-car.
120	Sudervė M. Zdziechovski's basic school	Vilnius	Lithuania	The Eco Car is rolling	5-10		Students discuss the importance of ecology and ecological means of transportation. Based on the previuosly sketched model, using, previuosly collected recyclable materials, in groups students construct an eco-car.
121	Sudervės M. Zdziechovski's Basic School	Vilnius	Lithuania	The Amazing Solar System	12-14		Students get acquainted with the characteristics of planets and satelites that make the Solar System, discuss the presented information.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							Using recyclable materials students develop a model of the solar system.
122	Šiauliai district Gruzdžiai gymnasium	Gruzdžiai	Lithuania	Harmony or fight?	10-17		Rapid globalisation processes of XXI century determine the fact that the person lives in the nature and not only in it. This process determines disbalance between the person and the nature. Humans destroy the nature without any thoughts. However, the person often thinks and understands that the nature has the influence for the human survival. Harmony is the most important aspect of the person. Humanity will survive and achieve a lot after reaching harmony with the nature. A lot of education institutions are established in the centre of cities and for that reason children do not have contact with the natural nature during education process. Present one solution for the installing barefoot trail using natural materials from the nature. The barefoot trail should reflect natural materials which are in your country, region, district. Integrated subjects are geography, mathematics, technologies, biology, information technologies, social education, psychology.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
123	Šiauliai kindergarten "Pasaka"	Šiauliai	Lietuva	Magical plants	5-7		Every day we hear that the world is facing a huge problem - trees are being cut down but not being replanted as fast as they should be, leading to a lack of green places. It is said that plants are the lungs of our world, but we do not protect them. So already in kindergarten it is very important to talk to children about plants, how to plant, grow and preserve them. The goal of the STEAM challenge is to plant, grow plants in different conditions and observe them. STEAM challenges: • Plant broccoli in the soil and keep one container in the light and the other in a wardrobe out of direct sunlight. • Plant the grass in two separate containers with soil. Put one container in a plastic bag and leave the other without plastic bag. • Plant spinach in soil and soil mixed with coffee grounds. • Plant the grass in the soil and on the sponges to wash the dishes.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							Observe all plants for two weeks. Measure how much the plants have grown every week.Children have to make conclusions in which conditions plants grow better and what need for plant's growing. Before starting the activities, teachers can encode the pictures of the plants with QR codes and only after the children have decoded and found out which plants they will grow, they can start planting activities.
124	Šiaulių lopšelis-darželis "Bitė"	Šiauliai	Lietuva	Discover how to make glue	6-7		Study vegetables (potatoes, carrots, beetroots, cucumbers, courgettes, etc.) to find out how and from which vegetables glue can be made. Demonstrate the suitability of glue by creating a mosaic. The scraps should be glued aesthetically pleasing, adhere and not fall.
125	Šiaulių lopšelis-darželis "Bitė"	Šiauliai	Lithuania	Discover how to make glue	6-7 years		This task should stimulate children to get to know the external and taste properties and forms of vegetables, to explore their applicability and benefits in everyday life. Using vegetables (potatoes, carrots, beets, cucumbers, zucchini, etc.) and the tools which are needed for the starch production process (peeler, grater, cheesecloth, bowls, water) to test which

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							vegetables can be squeezed, to see what happens when they stand 10 min. Once the juice has settled down and drained, potato starch is discovered, which children can mix with cold, warm and hot water, thus discovering the temperature with which the glue will best prepare. Check and test the glue by applying the scraps. The scraps must be glued aesthetically, stick and do not fall.
126	Šlienava Basic School	Kaunas district	Lithuania	How people got drinking water in ancient times?	9-11		Students will have: Get acquainted with ancient wells; To find out the principle of operation of a shaft well; Construct a shaft well model from selected materials.
127	Technical school "Rade Metalac"	Leskovac	Serbia	Make your own geometric assistant	15-18	6	Students make a model that will help notice the difference between all the elements of geometric bodies as well as the relationship between the length and the surface in space. First, they design and construct a wooden pedestal in the shape of a square, while practicing their geometric knowledge and woodworking skills. Then, from the slats, they make a 3D model of a prism and a pyramid,

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							marking important elements (sides, diagonals..) with various colours, by placing LED strip lights . They install switches along the edges of the base with basic mathematical formulas that applicable to the selected part.Choosing a switch, we choose the element of a prism or pyramid that will be illuminated by LEDs. The aim of the project is to apply knowledge of math, construction skills that help them to solve many problems of everyday life such as construction of various buildings, roads, packaging. Using LED strip lights, students expand their knowledge of light and additive colour mixing. Each step is designed as a group work, in order to encourage teamwork and cooperation. By programming the Arduino IDE and assembling the entire model, students will practically apply their knowledge of programming and electronics.
128	Tehnička škola "Nikola Tesla"	Šid	Srbija	Recycling bin LED smiley w/o Arduino	12-18	6	This task raises awareness of the importance of recycling and connects knowledge of electronics, programming and microcontrollers. The device that students are making is universal

Funded by the Erasmus+ Programme of the European Union

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							and easy to mount on any recycling bin. The principle of operation is based on the sensor located inside the bin, which, after inserting the recycling item, turns on the electronics that ignite the LED smiley. This device is modular and later a microcontroller can be added, for example an Arduino, which can count objects in a bucket or produce a sound effect, such as "THANK YOU", "OLEEE", "BRAVO" etc. A simpler version can be put together by younger students, while a more complex version is reserved for older ones. The device should help everyone understand the importance of recycling in an interesting way and further motivate them to recycle materials as much as possible.
129	The Kindergarten of Volungele	Alytus	Lithuania	„Build your castle"	5-6 years old		You must to build the highest possible castle in 5 minutes outside using secondary materials. You can use different types and sizes of boxes, packages and others. It must to stand for at least 2 minutes. Then you must measure your castel's height. The building strategy is your individual agreement. It must be discussed before the final building process. You can use additional materials (glue, dust tape and others). Only

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							students can build. The whole betting and standing process must be filmed.
130	Ukmergės lopšelis-darželis "Nykštukas"	Ukmergė	Lithuania	Water mill	5-7 years old		TO MAKE A WATER MILL • 10 disposable wooden spoons; • Hot glue; • Wooden spit; • Cardboard roll 3 cm in diameter and 4 cm long; • Scissors; • 2 cardboard circles 3 cm in diameter Process: 1. Glue up the ends of the roll with cardboard circles. 2. Shorten the handles of the spoons to half. 3. Stick the spoons together at an oblique angle, one after the other (mill wing principle). 4. Pierce the spit through the center of the roller. 5. Test the mill using a water jet.
131	University of Turku		Finland	Why do the wet clothes get cold but	Any	45 min	I have been wondering why do I get cold when my clothes get wet. Whenever I'm playing outside on a rainy day, I'm feeling warm until I get some water inside my clothes. At that point I

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
				dry ones stay warm?			get really cold, and even after the water inside my clothes gets warmer, it still feels cold. Also, I have heard that if you get your clothes wet when it's cold outside, you won't start getting warmer before you change the wet clothes to dry ones.
132	University of Turku	Turku	Finland	Why boat do not sink?	Any	45 min	I have been pondering how boats and ships made of metal float and stay upright on water. We humans have to learn how to swim and we have to use life jackets when traveling on a boat. We don't float without some help. And metal is heavier than humans, so it sinks even harder than humans most of the time. But still we can build boats and ships made of metal that not only float, but can also carry stuff on them. How is that possible? And how do ships stay upright on water even on windy days? It would make sense that they would topple over.
133	Vasaramäen koulu	Turku	Finland	Soundmeter by Micro bit	7-12	45 min	Students will design their own soundmeter. First they design the outside (Art) of the soundmeter and the theme of the art can be animal or musical instrument. Then they design the actual soundmeter. Soundmeter is going to made by Micro bit codesystem (engineering). Students have to design how they are going to connect

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							the microbit to a body of soundmeter. Third phase is to make a code (Technology) to Microbit. The code should recognize different sound. Fourth phase is to prepare the soundmeter. When the soundmeter is ready, students can start to try different instruments for using the soundmeter (Science). Students will make a Table or Chart by Excel where they can make notes that how loud the sound is (Mathematics). They can try different instruments to make a sound and compare the decibels (dB.)
134	VBS De Brug! Bruggestraat 24	Staden	Belgium	Necklace in the sewer grid ! How do we find it and recover it?	10-12	6	During playtime, Lies lost her necklace, one of her friends saw it lying in the sewer grid a while later. They try to lift the grid, but it is stuck… How to recover the necklace?
135	VBS Elverdinge, Bolle Meerstraat 12	Elverdinge	Belgium	Design a self-moving playground toy	8-12	6	Our playground is a boring concrete plain. At the pupil council it was decided to do something about it. The pupils get the task to equip the playground with play equipment.
136	VBS Langemark,	Langemark	Belgium	How can I use mirrors to create a	10-12	6	How can I use mirrors to create a tool that can be used to see above the heads?

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
	Zonnebekestra at 27			tool that can be used to see above the heads?			
137	VBS Sint-Idesbald	Roeselare	Belgium	Design your own indoor micro garden	10-12	6	Micro gardening indoors is hot topic! It's not only practical, it also looks beautiful, and you can also eagerly explore with it! All in one! The idea is to grow as many vegetables as possible indoors in a limited area. The pupils will think about a design that goes up in height (vertical garden). And they should also think about an authomatic system that supplies enough light, water and nutrition.
138	VBS St. Pieter, Sint Michielsweg 212	Kuurne	Belgium	Design a soap car box with an optimal relation between force and movement and stability.	10-12	6	Soap car box racing is fun! Some people make their soap box really fast, and others care more about the original design… Can you combine both?
139	Vinas Kudirka's progymnasium	Radviliškis	Lithuania	Roll, rumble, fly...	6-10		Build the train of the future using secondary raw materials that could move from the place.

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
140	Virbalis Basic School	Virbalis	Lithuania	Making the ancient folk instrument for the outdoor educational place.	14-17		Task – practical creative activity. This task will encourage students to learn more about their nation‘s traditions, cultural heritage, history and it will let integrate the subjects such as history, art, biology, technologies, music and language. Students have to make a folk instrument, describe its history of origin, traditions and its using earlier and nowadays. Also students have to find out the instrument‘s suitability for the outdoor educational place. During the process, they have to find out what wood is the best for the chosen instrument and why (biology, technologies), the decoration of the music instrument (art). Also students have to find out what can cause the sound and how fast it can spread in different places (in the water, air, vacuum). Does the temperture have the influence for the sound (physics)? And to calculate the prime cost of the musical instrument (mathematics).

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
141	Virbalis Basic School	Virbalis	Lithuania	Making the ancient folk instrument for the outdoor educational place.	14-17		Task – practical creative activity. This task will encourage students to learn more about their nation‘s traditions, cultural heritage, history and it will let integrate the subjects such as history, art, biology, technologies, music and language. Students have to make a folk instrument, describe its history of origin, traditions and its using earlier and nowadays. Also students have to find out the instrument‘s suitability for the outdoor educational place. During the process, they have to find out what wood is the best for the chosen instrument and why (biology, technologies), the decoration of the music instrument (art). Also students have to find out what can cause the sound and how fast it can spread in different places (in the water, air, vacuum). Does the temperture have the influence for the sound (physics)? And to calculate the prime cost of the musical instrument (mathematics).

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
142	Visaginas "Verdenės" gymnasium	Visaginas	Lithuania	"Make-rejoice-give" (We produce an ethnographic masks for a traditional holiday)	11-13 years		During pandemic, medical mask became an integral attribute of every person .It get so tired that we will soon no longer recognize each other without masks. In the past, lithuanians also used ... masks. It had a sacral meaning, worn for a completely different purpose. We want to revive these traditions, saving them in memory and passing them on to future generations. Celebration is not when only you are happy, but more when you can cheer up and make the other happy. Moreover if ones physical abilities are limited. During the task, students will study our ethnographic traditions and ones of other countries, when and for whom masks were and are still being developed and used. You will learn about masks created and used in different ethnographic region of our country, and why they were worn during the festival. During mathematic lessons students will exam the diversity of spatial bodies and their equivalents to the diversity of human face shapes. In nature lessons we will discuss how much and what kind of waste is generated, which of them could be used to make masks, the usage of coloring plants. Students will make masks during art and

Funded by the Erasmus+ Programme of the European Union
NACIONALINĖ ŠVIETIMO AGENTŪRA
DOSE DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							technology lessons. An inclusive aspect of volunteering is that these masks will be donated to children with special needs who are studying in the Social Skills Development Program (SUU). Our students will participate in a traditional celebration with them too. They will also show how to create a mask and teach them how to make it.
143	Visaginas city "Verdenes" gymnasium	Visaginas	Lithuania	Build the inclined plane and find out how different shape objects move (straight, in circle, bowing)	Age group 1st class, 6-7 years old		Why it'll be interesting? Do you ever wonder, why ball, box or bow move differently from the hill? Did you notice, what path do the easter egg makes when rolled from the tray? Do this challenge and find out! While doing this challenge by your self or alone, find out the meaning of terms: inclined plane, special objects – cylinder, cube, sphere, cylinder and etc, (math lesson). You will build the inclined plane and objects of various shapes (arts and technologies lesson). You will discuss with friends or teacher, from which materials it is possible to build inclined plain and various objects with different shapes

Funded by the Erasmus+ Programme of the European Union

NACIONALINĖ ŠVIETIMO AGENTŪRA

DOSE
DEVELOPMENT OF STEAM EDUCATION

A set of tasks created by teachers together with students for the international STEAM challenge competition

No.	School name	City/Town	Country of origin	Task name	Appropriate age of the students	Approximate duration of the task	Short description of the task (up to 200 words)
							(here is important material durability, reusability). You will conduct an experiment. You will find out the way of the movement of various special objects (straight, bowed, circle) during the World Cognition class and conclude the results.