



Līdzfinansē
Eiropas Savienības
Erasmus+ programma

SCIENCE ACADEMY

ZINĀTŅU AKADĒMIJA

OUR VISITS THIS SCHOOL YEAR



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The second Transnational Project Meeting and the second Short-Term Joint Staff Training Meeting were held in Środa Wielkopolska, Poland between 17th and 23rd September 2017. We visited the hosting institution, saw classrooms, school facilities and learned about the school and Polish educational system. Discussed and planned the forthcoming activities and further cooperation within and beyond the project. The completed activities were presented to the partners. We got to know Polish culture and traditions: visited Warsaw, Środa Wielkopolska, Koszuty,

From October 15 to October 20, a team of nine people from Rezekne Polish State Gymnasium took part in the Erasmus + "Science Academy" project meeting at Ali Çetinkaya Ortaokulu, Afyonkarahisar, Turkey. These were five days full of work and impressions. We participated in various workshops at school - conducted experiments and exercises in physics, chemistry, mathematics and other subjects, developed new projects, participated in sports activities, presented our performance, got acquainted with Turkish nature and history



Bioloģijas nodarbībā „Izproti meža daudzveidību” skolēni uzmanīgi pētīja meža apkārtni. Nodarbības mērķis bija mobilizēt skolēnu uzmanību uz lietām, kas sastopamas mežā. Skolēni vērīgi lūkojās pēc dažādām lietām - ēdamām, veselīgām, saistītām ar svētkiem, skaistām utt.

Apkopojot iegūto informāciju, skolēni secināja, ka mežs ir dzīvības un dabas daudzveidības nodrošinātājs,

atpūtas un kultūrvēstures objekts, koksnes ieguves un cilvēku iztikas avots.



Nodarbība „Izproti meža daudzveidību!”

Savukārt otrajā nodarbībā „Saskaties ar koku!” skolēniem bija iespēja veidot sava koka nospiedumu, kas ir katram kokam unikāls. Skolēni bija pārsteigti, cik daudz dažādu krāsu var samek-



lēt gan pašā kokā, gan tā apkārtnē.

Tāpat skolēni varēja izkrāsot savu koku dažādos gadalaikos, kā arī izdomāt un uzzīmēt, kā koks izskatītos klāsē krēsla, galda, skapīša veidā.



Abās nodarbībās skolēni uzzināja daudz jaunas informācijas par mežu, tā bioloģisko daudzveidību, kā arī nozīmi cilvēka dzīvē!

In the Biology Lesson "Understanding The Forest Diversity", students carefully studied the forest area. The purpose of the lesson was to mobilize pupils' attention to things that are found in the forest. The pupils looked closely at various things - edible, healthy, connected with holidays, beautiful, etc.

Summarizing the information obtained, the students concluded that the forest was a provider of life and nature diversity,

recreation and cultural history object, wood and human livelihood source.



Lesson "Understanding The Forest Diversity!"

In the second session "Match with the tree!" The students had the opportunity to create their own tree footprint, which was unique to each tree. The students were surprised how many different colours could be



found both in the tree itself and in the surrounding area.

Students also could paint their trees in different seasons, and figure out how the tree would look like in the classroom in the form of a chair, table, cupboard.



In both classes students learned a lot about the forest and its biological diversity as well as its meaning in human life!

▣ Āra nodarbība "Saproti, cik maksā mežs!"

Āra nodarbības mērķis bija rosināt skolēnus izprast meža kā koksnes un cilvēku iztikas avota nozīmi, kā arī iemācīt skolēniem aprēķināt koksnes daudzumu mežā.



▣ ▣ Atbraucot uz mežu, katra skolēnu grupa saņēma uzdevumus. Vispirms skolēniem nācās atrast koku, kas vislabāk raksturo šo mežu, kas ir vidēja

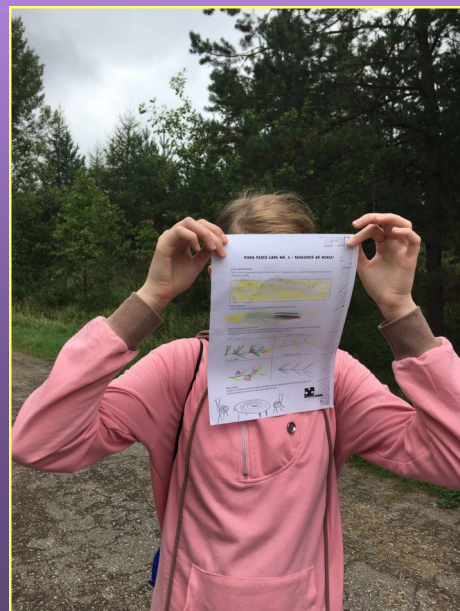
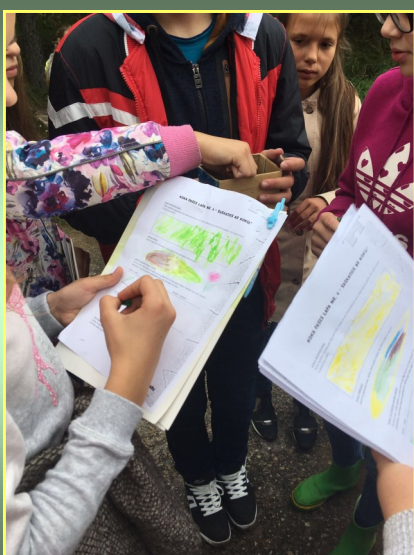
augstuma, kas pārstāv visizplatītāko koku sugu. Pēc tam skolēni mērīja, rēķināja.

1+2 4-3cm

▣ Skolēni bija pārsteigti, cik vienkārši var noteikt aptuveno koka augstumu un cik lietderīgi ir izmantot matemātikas stundās iegūtās zināšanas, aprēķinu formulas.

Nodarbības noslēgumā skolotāja rosināja skolēnus sameklēt informāciju, cik šobrīd maksā dažādu veidu koksne kubikmetrā, un aprēķināt, cik maksā nodarbības vietā augošā koksne.

Pēc nodarbības skolēni nonāca pie secinājuma, ka ikdienā tomēr labāk ir izmantot koku nevis plastmasu, bet tad noteikti ir jāplāno koksnes resursu atjaunošanas iespējas. Skolēni labprāt piedalītos arī meža stādīšanā. Un tas jau ir jauns izaicinājums meža izpētē!



Outdoor Lesson "Understand, how much the forest costs!"

The purpose of the outdoor activity was to encourage pupils to understand the importance of forest as a source of wood and people's livelihood source, and to teach pupils how to calculate the amount of wood in the forest.



When we came to the forest, each group of students received tasks. First of all, the pupils had to find the tree that best described this medium-sized forest, which repre-

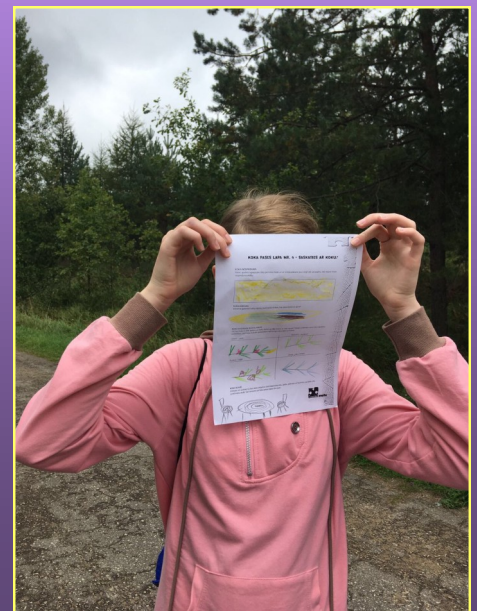
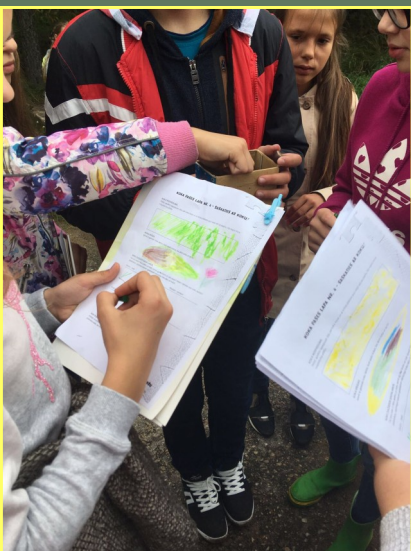
sented the most common species of trees. After that the pupils measured, counted.

1 + 2 4-3 cm

The students were surprised at how simple it was to determine the approximate height of the tree and how useful it was to use the knowledge acquired in mathematical lessons, the calculation formulas.

At the end of the lesson, the teacher encouraged students to find out how much different types of wood do currently cost per cubic meter and to calculate how much does the wood, which grew in the territory of the outdoor lesson, cost.

After the lesson, the students came to the conclusion that it was better to use wood instead of plastic every day, but then it is absolutely necessary to plan the possibilities of restoring the wood resources. Students were also interested in planting the trees. And this is already a new challenge in forest research!



Ikdienā mēs sastopamies ļoti daudz ar vielu maisījumiem, piemēram, jogurts, tēja, garšvielas, minerālūdens utt. Tos iegūst sajaucot divas vai vairākas vielas.

Ir maisījumi, kur vielu daļiņas var saskatīt, bet ir maisījumi, kur tās ar neapbruņotu aci neredz. Tā veidojas viendabīgi un nevienmabīgi maisījumi.

Maisījumu sastāvu var mainīt. Ietilpstošās vielas saglabā savas īpašības. Tās var citu no citas atdalīt ar vielu atdalīšanas paņēmieniem.

EKSPERIMENTĒJAM! "VIELU MAISĪJUMI!"

Šādus vielu atdalīšanas paņēmienus skolēni veica eksperimentāli.

1. **eksperiments.** Sajauc kopā dzelzs skaidiņas un smiltis. Atdala izmantojot magnētu.
2. **eksperiments.** Uz papīra lapas uzber pārtikas sāli un pievieno piparus. Ņem plastmasas karoti, kuru trin uz vilnas auduma. Tad karoti pievieno maisījumam, pipari pielīp pie karotes.



On an everyday basis, we are faced with a lot of compound substances such as yoghurt, tea, spices, mineral water, etc. They are obtained by mixing two or more substances.

There are mixtures where particles of matter can be seen, but there are mixtures where they are not seen with an unaided eye. It forms homogeneous and heterogeneous blends.

The composition of the mixture can be changed. Ingredients retain their properties. They can be separated from each other by means of separation techniques.

WE PERFORM EXPERIMENTS! "MIXTURES!"

The following methods of separation were carried out by the students experimentally.

1. **an experiment.** Mix together iron crumbs and sand. For separating use magnets
2. **an experiment.** Put the salt onto the paper and add the pepper. Take a plastic spoon, rub on a woolen cloth. Then add the spoon to the mixture, pepper will stick to the spoon.



3. **eksperiments.** Vārglāzē ielej ūdeni un pievieno pārtikas eļļu. Eļļas blīvums ir mazāks par ūdens un tā uzpeld augšā. Tad ņem atdalāmo piltuvi, lai atdalītu šīs vielas.
4. **eksperiments.** Vārglāzē ielej biešu šķīdumu ūdenī. To iepilda mēģenē ar gāzu novadcaurulīti, kuru ievada otrā mēģenē. Otrā mēģene atrodas traukā ar aukstu ūdeni. Pirmo mēģeni karsē uz spirta lampiņas. Pēc neilga laika otrā mēģenē novēro bezkrāsaina šķidruma destilāta uzkrāšanos.

EKSPERIMENTĒJAM! "VIELU MAISĪJUMI!"

5. **eksperiments.** Uz svariem nosver smiltis un pārtikas sāli. Ieber vārglāzē, pievieno ūdeni. Ar stikla nūjiņu samaisa, lai izšķīst sāls. Veido kroku filtru, kuru ievieto piltuvē un kolbā. Filtrē, lai atdalītu smiltis. Tad dzidro šķīdumu ielej porcelāna bļodiņā un karsē uz spirta lampiņas līdz iztvaiko ūdens, paliek sāls kristāliņi uz sienām. Tā atdala sāli no ūdens.



3. an experiment. Pour water into the beaker and add edible oil. The oil is less dense than the water, so the oil floats on water. Then take a separable funnel to remove these substances.

4. an experiment. Pour the beet root solution into the water. Place it in a test tube with a gas drainage tube and into the second tube. The other tube is in a bowl with cold water. The first tube is heated with an alcohol lamp. After a short time, the second test tube shows the accumulation of a colourless liquid distillate.

EKSPERIMENTĒJAM! "VIELU MAISĪJUMI!"

5. an experiment. Weigh sand and salt. Put it into the beaker, add water. Mix with a glass stick to dissolve the salt. Create a folded filter that is placed into a funnel and flask. Filter to remove sand. Then pour the clear liquid into a porcelain bowl and heat it with an alcohol lamp until it evaporates, leaving salt crystals on the walls. It separates salt from water.





EKSPEDĪCIJA MEŽĀ! SADARBĪBA AR LVM.





EXPEDITION IN THE FOREST! COOPERATION WITH LSF.



RADOŠĀS DARBNĪCĀS



CREATIVE WORKSHOPS

