





**COMENIUS** MULTILATERAL SCHOOL PARTNERSHIPS / MULTILATERALNO ŠKOLSKO PARTNERSTVO

#### **Crosscurricular teaching – TEACHERS' EXAMPLES OF GOOD PRACTICE**

#### Kroskurikularno poučavanje – PRIMJERI UČITELJSKE DOBRE PRAKSE

Results of the project: *Cross-curricular teaching on cultural and natural heritage topics* / Rezultati rada na projektu: *Kroskurikularno poučavanje na temama kulturne i prirodne baštine* 2013 – 2015

Pučišća elementary school / Osnovna škola Pučišća

# THE FOREST Sth GRADE

## THE FOREST 5th GRADE

#### CROSS-CURRICULAR TEACHING (REGULAR PROGRAM)

## **OBJECTIVES:**

- To connect teaching with life
- To increase students' motivation for learning
- To develop students' competencies (communication, competence for learning and problem solving, social and work competence)
- Permanent students' knowledge in different teaching areas

## TEACHING METHODOLOGY

- Researching topics in the immediate reality
- Researching information from the literature
- Information processing
- Pupils' creativity
- Analyzing and explaining the results

### Connected teaching areas (crosscurricular) SCIENCE **SPECIAL GEOGRAPHY EDUCATION** FOREST **MOTHER** TONGUE **HISTORY** TE

## SCIENCE

The coastal forests

• The objective: to introduce and to determine the characteristics of coastal forests

• Field work

- Watching the trees in the area, discussing



## The task: investigate trees in immediate environment, select a tree and describe it!



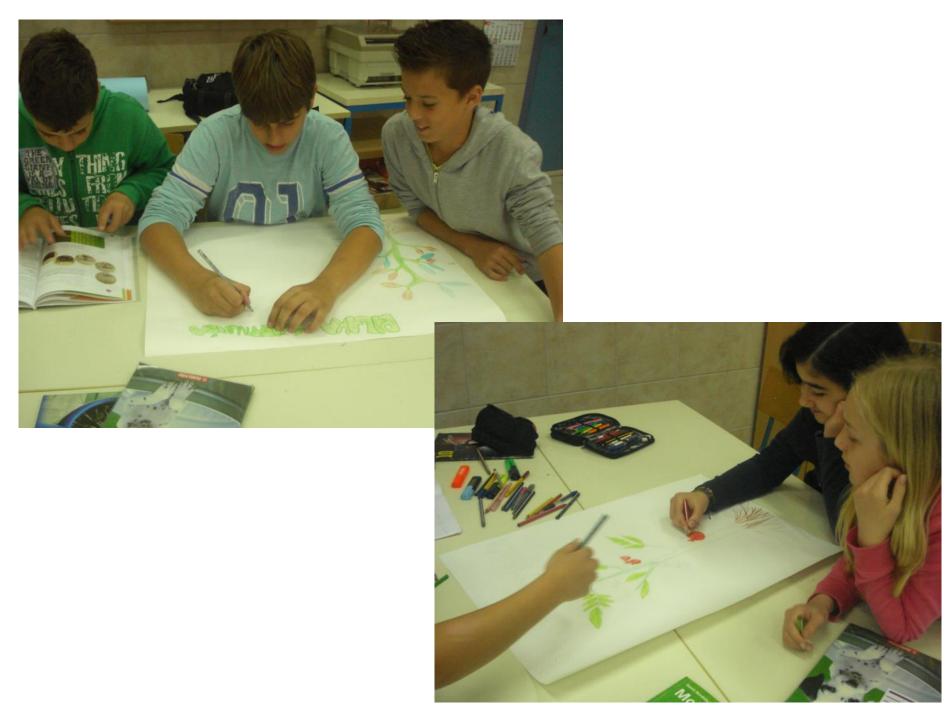






• Working in the classroom

Systematization of data collected in the field work and making posters.







#### **Teaching unit : Materials**

Teaching topic: Wood, wood types and tools for woodworking

WOOD - a plant consisting of root, trunk and treetops. It is used for heating and as a technical construction material.

The types of wood:

- hardwood (oak, beech, walnut, ash, maple ...)
- soft (linden, spruce, fir, larch, pine ...).

Tools for woodworking - the device used for changing the form of wood and transform it into usable object (window, chair, cabinet, flooring ...)







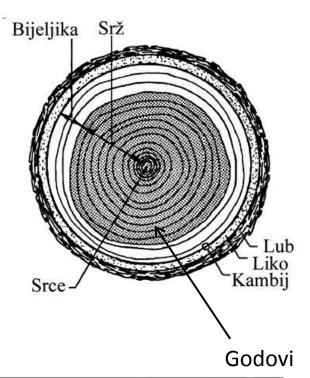
Island species of wood are not technologically usable. Tehy're of small height (*česmina*), the trunk is of small diameter, and are full of resin (*pine*).



#### CUT VIEW OF SOME BRAČ WOOD SPECIES







ISTRAŽIVANJE STRUKTURE DRVA!



Brač pine is not technologically useful (resin and parasites beneath a thick crust).



#### USAGE

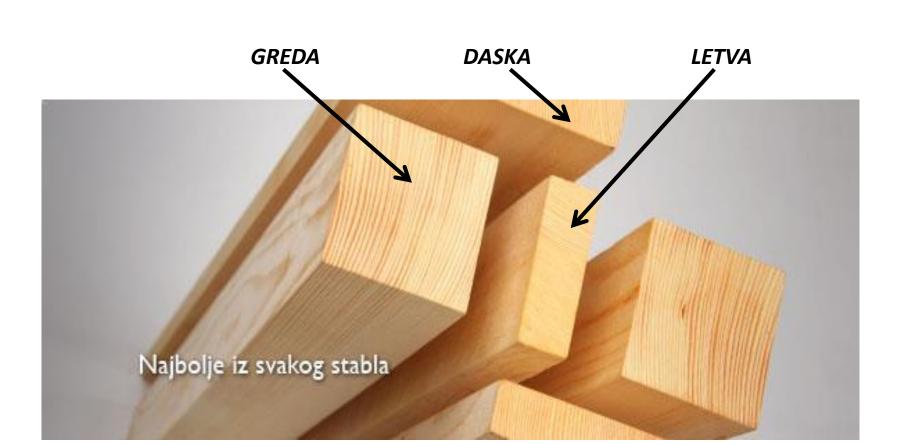
Semi-processed wood of *smreka* and *planica* - supporting structure for the roof of field houses.



#### SAMPLES OF TECHNOLOGICALLY USEFUL WOOD

**The trunk** - the most useful piece of wood (planks, beams, moldings, veneer and flooring ....)

Coniferous (evergreen) - fir, spruce, pine, spruce, larch, yew Deciduous - oak, beech, hornbeam, ash, maple, elm, walnut, acacia, poplar, etc.





#### \_\_\_\_ GREDE , GREDICE I LETVE

### **PRODUCTS MADE OF WOOD WASTE**

Products made of wood residues that occur in the cutting-sawing process:

- plywood
- Panel boards
- Hardboard and
- chipboard

Mainly used for the production of furniture.

#### Plywood is produced by gluing several layers of veneer



#### Panel boards



## Hardboard is made of wood waste to be bonded with synthetic resin under high pressure and temperature



#### chipboard



#### Different tools are used for processing the wood











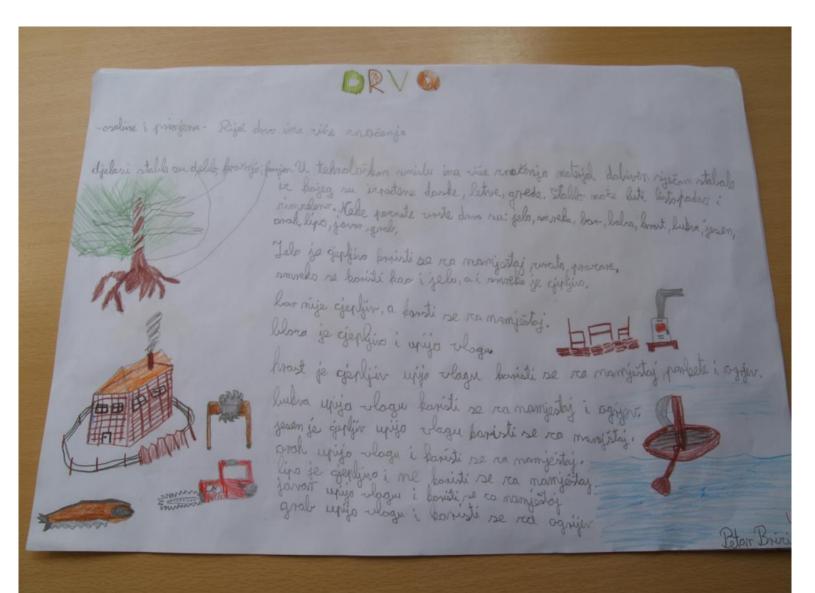








#### Pupils' maps - the wood and its use





Drvo je materijal dobučen spečom stabila Od drva se rade daske, letve i grade Drvo je jedan od broz povjest najšešće upotrebluci h materijala. Preradbom drva domnu se išperploza, iverica, povol-ploža, parkel i sl. Najvojednji dio drveta je doblo Drvo djelimo na domaće i strane vrste Osmaće vrste djelimo na bjelogorična i crnogorična drva Svaka vrstu drveta karaktenzi raju svojstva. To su turdoća, jepivost, upijavje ulage til. Tvrdoća je otpornost materijala premo prodiranju drugog ela u njegoriu površinu. Gjepivost je ojstvo drveta da se dade uzdužno ati. Svako drvo ima određena Izoli činu ge dobi venu iz korjena i zato se slažu azmacima i suče

#### Krobnja

Lorijon

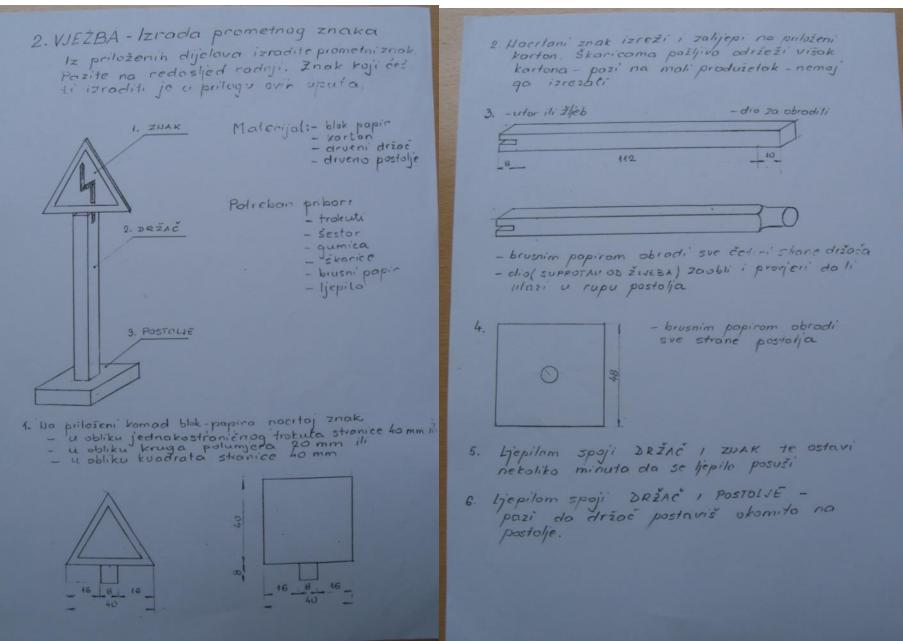
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### Exercise – making a traffic sign

Base and pillar will be made of wood

#### Working sheet - a guide to work



### TOOLS AND MATERIALS

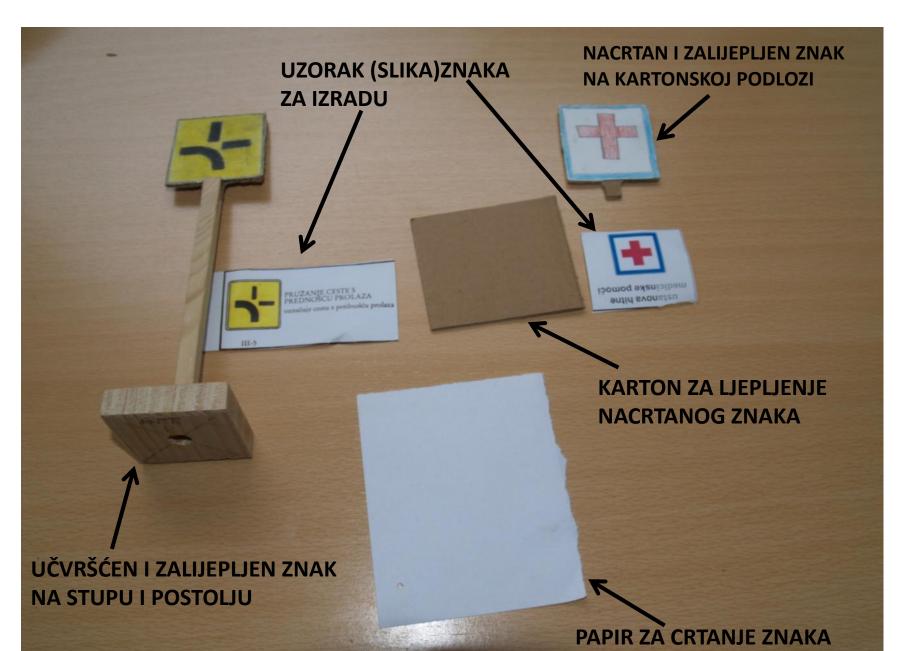
Different kinds of sanding paper for processing the rough and uneven surfaces.

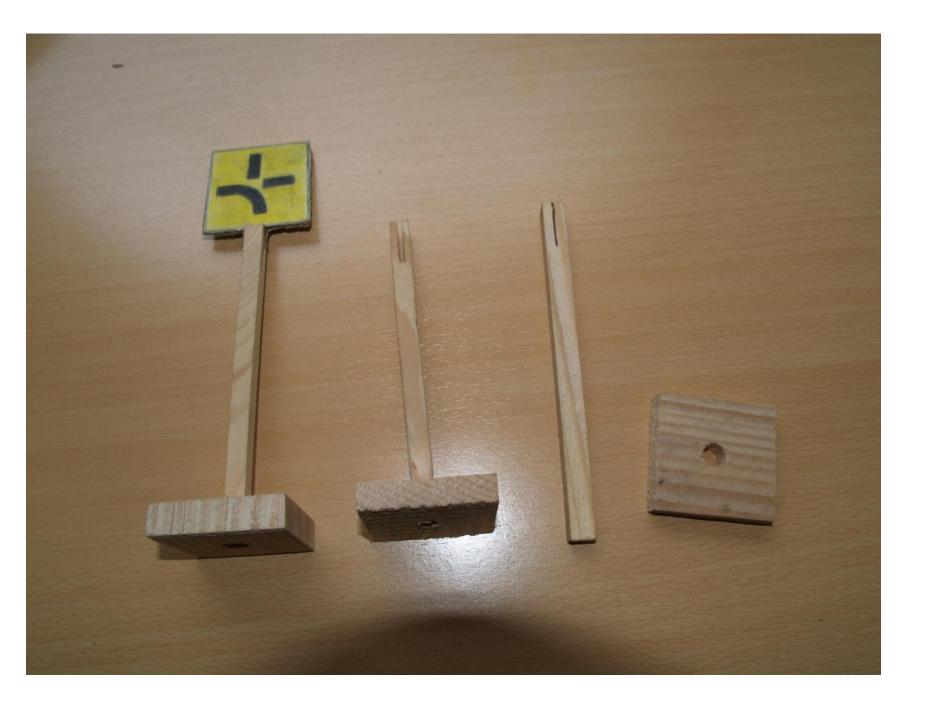
















#### Geography

#### Area: Weather and Climate Teaching Unit: The diversity of climate and wildlife

## Objectives: - to notice the layout of the Earth's climates

- to explore the impact of climate change on the diversity of vegetation on Earth  Groups of students research and describe one of the climate with its forests and wildlife

Group 1 - deciduous forests
Group 2 - Mediterranean evergreen forests
Group 3 - Coniferous forests - taigas
Group 4 - tropical rainforests





#### Tropske kišne sume (prasume)

Klima .

Temperature na viseka tujekom vijele zudine. Io na najkrisovitija podračija na žemlji





Namento de 200 s'elerie sustana Dessure se mila se



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in jahoog Americi Aprili



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#### History

#### Teaching area: Roman republic and empire Teaching unit: Roman conquering

Objective: To explore how the Romans ruled conquered territories as part of the Roman Empire and what changes have been made Activity: watching fifteen-minute clip from the documentary Wild Europe (the relationship between man and forests throughout human history). Featured clip refers to the period from the Stone Age to the fall of the Roman Empire. It's shown how the Romans were cutting trees, building forts and roads, "whizzing" European wilderness.

Short discussion after viewing the film: How did the Romans treat the newly captured areas? In what ways they exploited European forests?  The tasks after the debate: to describe or draw a relationship of Rome to the forest and wildlife. Means of expression depend on the preferences of students.

1. drawing

- 2. essay Roman Empire and Europe's forests
- 3. short comic

Drawing and Composition - individual work, The comic – group work

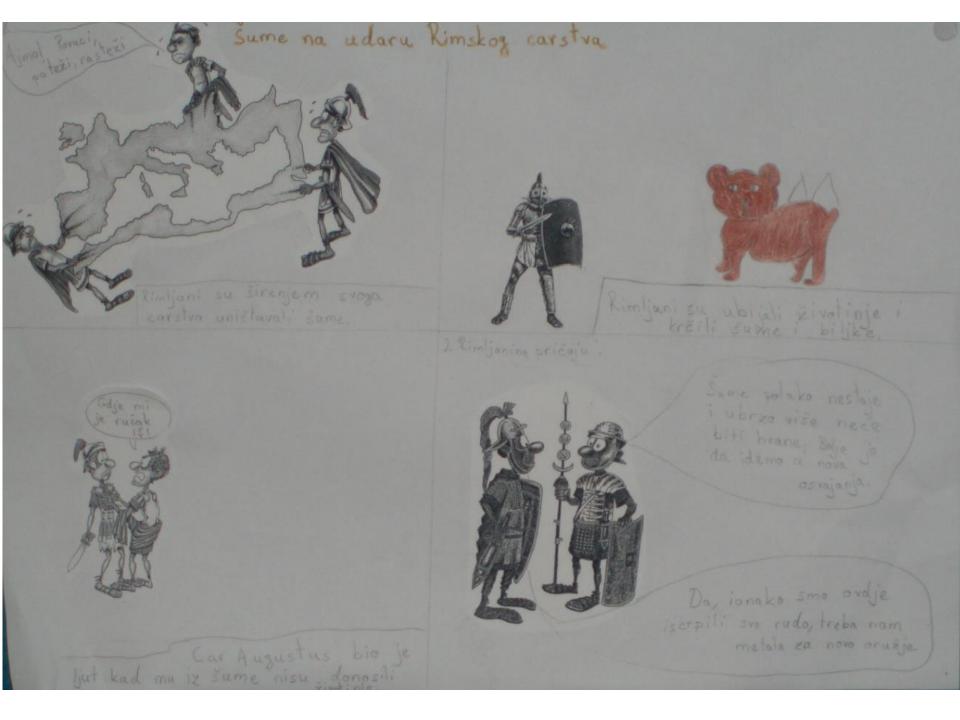
















## mothertonque

# Bajka Fairytale

#### "STRIBOR'S FOREST", A FAIRYTALE

• Project includes reading, literature, oral and written expressions.

#### 1. READING-INTRODUCTION "STRIBOR'S FOREST"

#### 2. MEETING THE AUTHOR (Ivana Brlić Mažuranić) Method: heuristic conversation Students were informed on the author (opus) Students will also find out more about this piece.

#### **3. READING PREPARATION**

- One of the most important things in this book is its style. We can find a lot of old and forgotten words, incomprehensible to the readers. Students must be prepared to understand such a text. Students will write down unknown vocabulary during the reading process.
- New vocabulary will be used in the sentences so they could be understood.

#### 4. INDVIDUAL (INDEPENDENT) READING

 Students will read the fairy tale at home, and then they will note their impressions. They point out the things they like the best (describing the exterior, characters, themes, messages, thoughs). They will also talk about different difficulties whilst reading (lexis, broad narration, characters, events).

## **5. READING-LISTENING**

 Due to the complexity of motives and linguistic and stylistic peculiarities of the work, the students listen to the tale once again.

• The teacher reads it interpretatively.

## **6. SUMMARIZING - RETELLING**

• Form of work: pair work

After listening to the fairy tale, students will retell it in written form.

## 7. THEORETICAL ANALYSIS OF THE FAIRY TALE

- Method: heuristic conversation
- Students notice the basic features of a fairy tale.
  - 1. Topic: battle of good and evil
  - 2. Characters: real and unreal
  - 3. Miraculous objects in a fairy tale
  - 4. Composition of a fairytale
  - 5. The basic idea
- Students independently conclude what a fairy tale is and what basic features are present.

# 8. NARRATION AND CHANGING THE VIEW (OPINION)

• Method: heuristic conversation

• Students create various portraits after analyzing the characters.

- Work: individual, written
- Students have chosen their characters to tell the story.

## **9. DESCRIBING UNREAL CHARACTERS**

• Method: heuristic conversation

• Students create unreal characters. They find external descriptions. They induce characters' manners by their actions. They make their own conclusions and opinions.

## **10. PREPARING TO DECRIBE EXTERIOR**

• Students write down motives. They are motivated by pictures and personal images.

• Analyzing the motives and noticing the most common ones.

## **11. DESCRIPTION**

 Students do written papers based on different motives.

• Reading and analyzing the written work

# 12. WRITTEN WORK-CREATIVITY AND NARRATION

- Students will create personal fairy tales.
- Students will follow key elements for a literary work.

## **13. ANALYZING AND EVALUATING**

• We are going to read 4 new stories.

• Students discuss and evaluate their stories and they follow the norms from the guideline

## **14. FINALIZING THE WORKS** Students will illustrate their fairy tales.



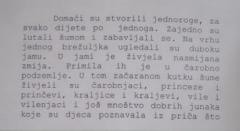
## **15. PRESENTING THE ILLUSTRATIONS** Each group will present its illustration in front of the class



## **15. PRESENTING THE ILLUSTRATIONS**



## **15. PRESENTING THE ILLUSTRATIONS**





Otkrili su me, uvukli se pok moju koru, Statisli dvorac, odvali su Niaru, Statislina Stribo odvali su Niaru, Statislina Stribo te borili sestre vile, Domaći su se borili sestre vile, Dokla s najstrašnijom, Velebita se akvalia s najstrašnijom, majružnijom i najsločestijom vješticom Minezvom, Šuma livotinje su pobjedi i posakrivale se odvarajsla, stabla je to Lukas, Hivotinje su pobjedi i posakrivale se dokarajsla, stabla je to Lukas, divotinje su pobjedje i posakrivale se dokarajsla, stabla je to Lukas, kako, mladić je znao da je na svog biojek doko, mladić je znao da seneo, tko zna kako, mladić je znao da

Ostavio je Klaru i pohita u Ostavio je Klaru i pohita u borbu. Vidio je Velebitu na izmaku snage i moćnu Minervu nad njom. Domaćima je ponestajalo snage. Klara je osjećala da mora pomoći. Inala je da su njezine moći velike, ali nikad



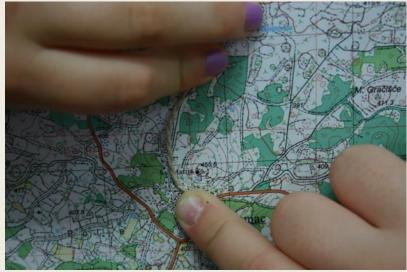


ih još nije upotrijebila. Stvorila se poput vriloga na borlištu. Oduzela je Minervi čarobni štapić i slemila ga na dva dijela. Odjednom su svi čarobnjaci nestali, vještice se poput gvja posakrivale pod kamenje, a rie kao da je imparilo. Klara je majci dodirom vratila snagu. Lukasu je poljupem rahvalila što ju je spanio. Klara i Lukas sve češće su se susretali u šumi. Njhova ljubav rasla je di dana u dan. Na kraju mu se oženili i itvjeli sretno do kraja fivota.

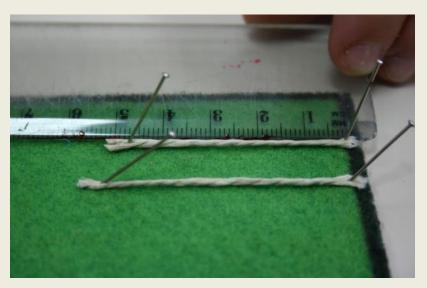


### Research preparation 1. 1. to determine the forest position on the map and in real life (a map, a rope, a ruler)



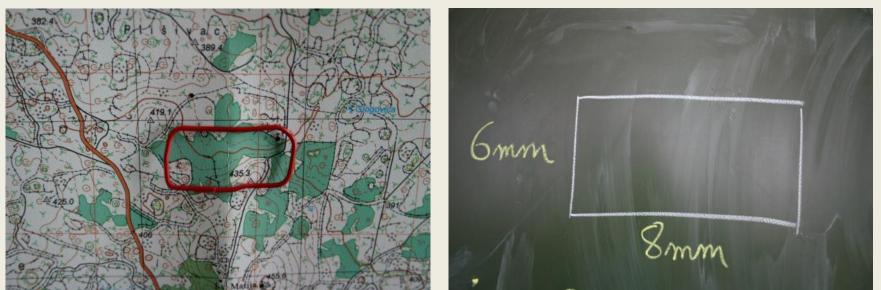


- the forest is 1250 m north of Gornji
   Humac
- the altitude is 400 m
- there is an old path that leads to the forest
- there is a St. George's church near the forest



# 1.2. To measure the surface of the (a thin wire, a ruler)

Marking the forest and its shape



Measuring the length and the surface

• rectangle sides: 6 mm (map)

150 m (environment) 8 mm (map) 200 m (environment)

forest surface= 30 000 m<sup>2</sup>

# 1.3. to practise measuring in the forest(drvena palica, građevinski metar, ravnalo)

#### measuring the tree height

#### Measuring the trunk thickness



using the ratio method to measure the height

using the two parallel lenghts to measure the trunk thickness

### Research in real life 2.1. to determine they type of the forest and plant species (compass, map, photo camera)



- forest is evergreen
- plants:
  - oak, maple, zelenica, juniper, brambles, hornet, moss
- the oak is the most common

# 2.2. To notice the plant spread (photo camera)

#### The edge of the forest

The interior





- the interior is evergreen
- the edge: maple, brambles, juniper and zelenica

### 2.3. To determine the conditions of the plant spread

### Measuring the tree height

knocking down the tree

measuring the knocked tree



- we determined that oak tree is taller than the other trees
- smaller trees live and survive on the edge of the forest because of the better light exposure
- high oak trees survive inside the forest beacuse the treetops surpass the forest

# 2.4. to investigate the height and the trunk thickness ratio

#### Measuring the trunk thickness

consequences of rapid growth





- maple has the thickest trunk
- oak has a thick trunk, but most of the plants cannot survive inside the woods
- most of the plants usually die mostly because of the strong winds

### 2.5. to measure the tree density in the forest

Making a square(a = 10 m)



#### **Counting plants inside the square**



- plant density is higher on the edge of the forest (because of the light)
- 30 trees live inside the forest (inside the square) a=10m
- struggling for space is visible everywhere

### breakfast



## Expressing the impressions 1.1. forest ball



• we listened to the wind and joined the trees at the forest ball

# Part of the research in real life to explore the survival in the forest

embracing the death

**Consequences of failing** 



- stronger plants destroy the smaller ones
- plants that don't have enough light dry and don't grow properly
- we have witnessed the most quiet struggle and suffering

## 2.2. to determine life conditions in the forest

#### Soil and water

Light and warmth



- the soil is stony, rich with humus due to oak leaves
- soil is very humid (there is no sun light and there are a lot of stones in it)
- it is dark and humid inside the forest

### 2.3. to explore other forms of life in the forest



- moss grows inside the forest
- there are also mushrooms in the humus

# 2.4. to recognize and to photo parasites among the plants

ivy

lichen



• ivy entangles other trees using its small and thick hairs

• lichen can usually be found on the tree cortex (crust)-it means that the tree (host) is growing old and sick

### **1.2.** Interpreting the book *Wild forest*



•Seeking for the secrets of forest

# **1.3.** experiencing the text(seeking the secret path in the forest)

#### Moving through the forest



#### secret tenant and its habitat



• encouraging creativity – *The forest legends* 

# **1.4. imagining the sounds**(listening to flute tones in the classroom and in the forest)





• The birds joined us in making music

## **1.5.** Dance in the forest



# 3. Part of the research in real life3.1. to explore animals in the forest

#### animals

#### **Animal tracks**



- snails, earthworms, spiders, lizards and various insects live in the forest
- there are also animal tracks (ants, spiders)

### 5.2. to explore life signs before the winter



dry cricket remains were found along with acorn remains eaten by dormice (loirs)
animals eitehr die due to lack of food and warmth or they hibernate

# 3.2. to explore the connection between plants and animals

#### Many animals live in the forest

#### Humus "producers"



- various animals find shelter and safe haven inside the forest
- aniamls also find food in the forest
- earthworms and other small organisms produce humus by biodegrading the surface layer

#### 3.3. linking the plants and animals (food)

Juniper fruit

**Bramble fruit** 



- we found fresh fruit on the junper and ivy tree
- we also found bramble and acorn fruits
- acorns are the most wanted forest fruits-eaten by wild boars, sheep, goat, dormice
- in order to meet other animals we should come in summer or autumn

## **1.6.** Expression by music (forest instruments)





• with forest percussions we express the speed of moving of different animals

## 4.1. research and processing the data(how did the people use the forest in the past)

#### wood products



• wood proucts:

oak: samor, mallet, turanj, šošice, tool holders juniper: forks, rasps, stakes, skewers gluhoč: spindles, kanet, kudija, skewers ash tree: forks, roof constructions (kantinele) smrdej: povroz

#### 4.2. to explore how people use the forest today

Vineyard forks



firewood



- there aren't many wood products today
- there is a lot of firewood

### 4.3. to evaluate people's concern to preserve the forest

#### People's leftovers in the forest





Using the resources today

• we didn't notice a lot of waste near or in the forest

• the biggest danger is the use of resources today which changes the structure and the shape of original landscape

#### 5. How can we help to preserve the forest?



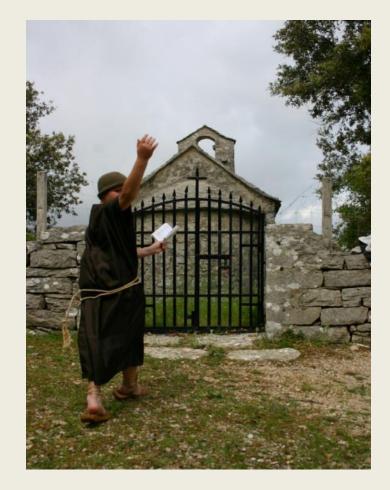
• we should find the forgotten values and point out the priceless beauty of the forest

## 1.7. expressing the experience literally (legend of the forest)

#### Church of St George and its secrets



#### WE COULDN'T RESIST THE CALL OF PAST TIMES



## If we lay low we might see....



• MIDGET



• FAIRY RUNNING...



• hungry Robin Hooda



#### •A mean witch



• a monk contemplating...

#### • forest fairies





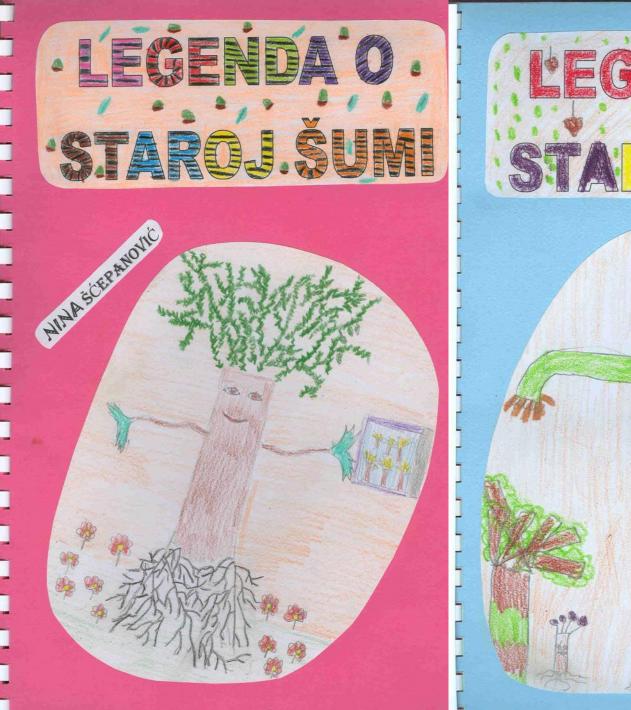
#### • careless shepheards

#### • a lost geysha

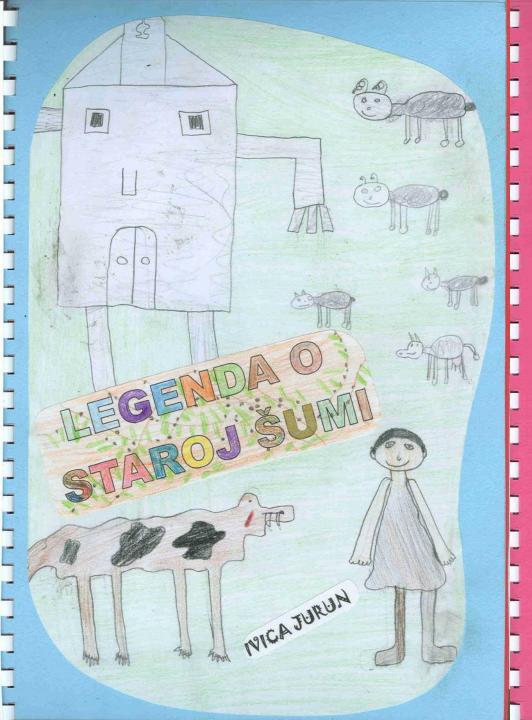


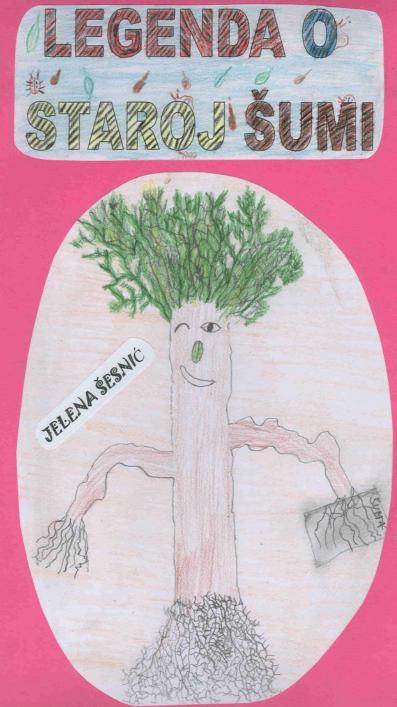
## 1.6. after listening, looking, observing, searching and imagining we created 10 legends











## ANIMALS OF COASTAL AND MOUNTAIN AREAS OF RH

Branch school Pražnica, Combined class of 2. and 4. grade

## Presentation and work on project Forest



## Around Pražnica, our village, there are mixed forests. They are composed of oak, littoral pine and ash.



# Forests are near settlements and there are no large animals in it.





## We found caterpillars and birds.

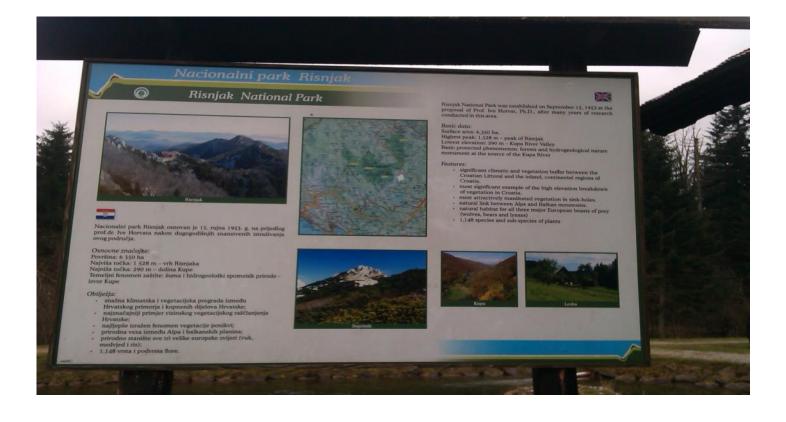




# We found animals that live in our forests in encyclopedia and magazines.



## We also visited *Risnjak national park* in mountain area of Croatia.



# Risnjak got his name after *lynx*, and is also home for bears, dears and wild boards.









We defined the major sides of the world with compas. These forests are biger than coastal forests so animals in it are also biger and wild.





## We had to go to the zoo to see some other animals.







## Conclusion : the most dangerous animals of coastal forests are snakes and wild boards.







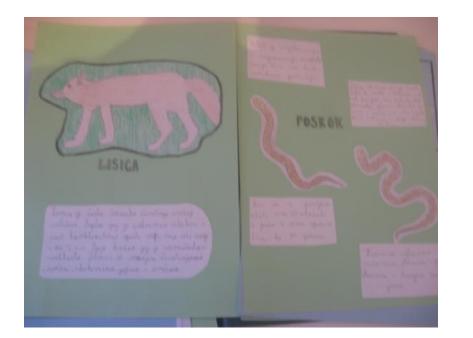
# We made a small encyclopedia by researching animals.













# We imitated animals by making sounds and using movements.





## We made bird nest with ripped paper.







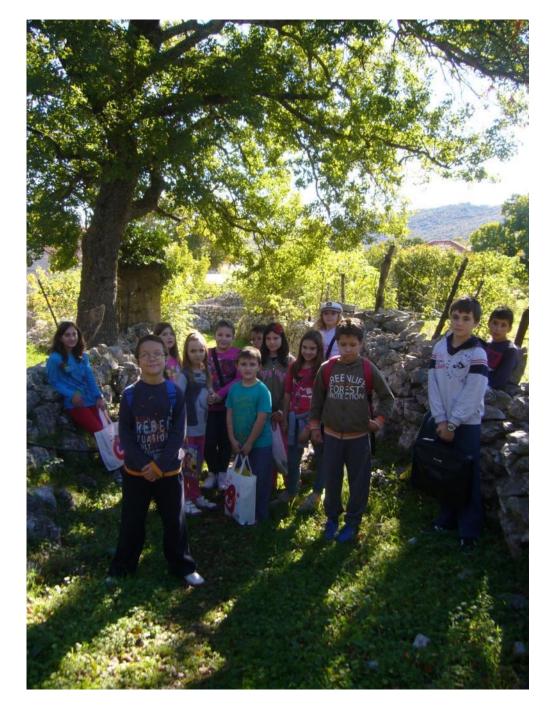
# And in the end, we cleaned a small forest around our school.











## **FIRE PROTECTION**





Let's protect our forests!



We visited a fire station. Firefighters drove us to the station with their vehicle...







### And the story began...

## We wanted to know what can we find in that truck







We saw tubes, belts, hatchets, various valves and other necessary things ...

...and backpacks worn on inaccessible terrains...

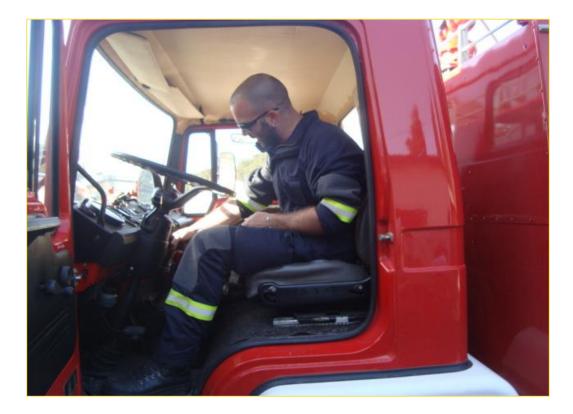






#### We couldn't stop asking different questions ... (that we prepared earlier)

Firefighter Toni explained us What are all the buttons in the truck for, and then we heard the sound of fire sirens!



#### A surprise followed - firefighters pulled out the hose and performed an exercise - only for us...





The water jet is created as water comes out pressured from the hose...

#### ...and from a water cannon on the truck



Icing on the cake - a demonstration of fire extinguishing with foam (children commented: it looks like whipped cream ...)







We could not leave the firefighters without trying to look like them wearing helmet and safety glasses... A joint photography at the end of the visit: station commander Marko, firefighters Toni, Šime and Ivica & cheerful 2nd graders ...





The hosts drove us back to school with their vehicle, and rewarded us with convenient gifts (games, balloons, T-shirts) Upon returning to the school, being full of impressions, we started to work.

The first task was to describe the firefighter.

#### Using Lego bricks the pupils built firefighters, fire engines and situations related to fire and firefighters.

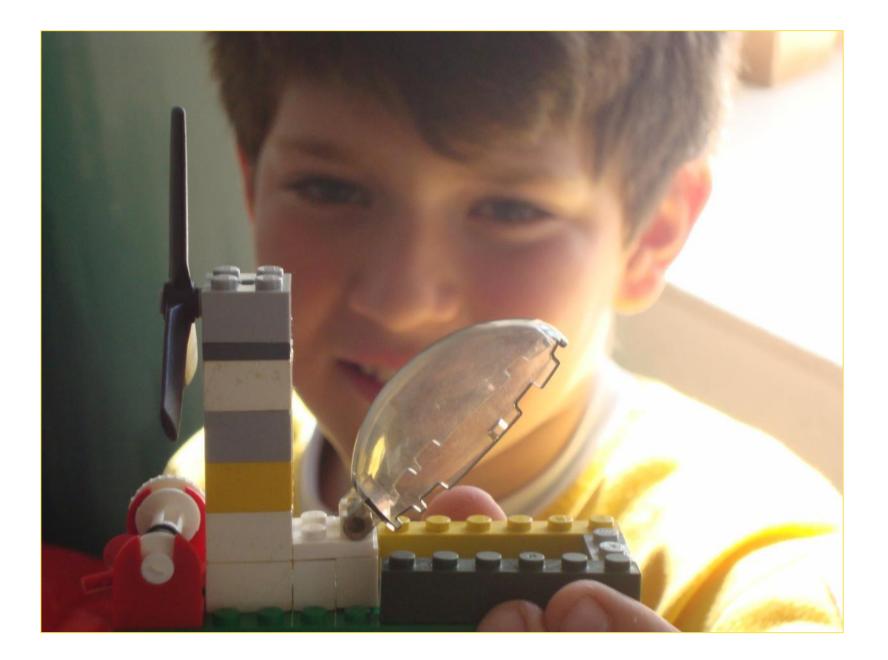












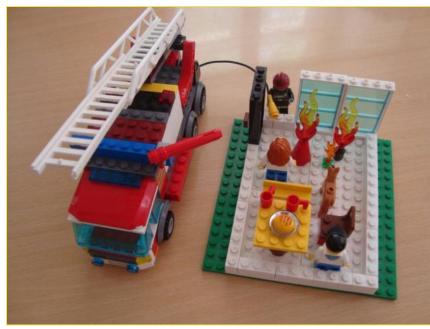


















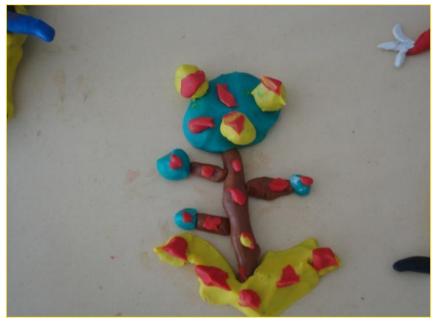




# One group of pupils were modeling plasteline ...









## They were happy to express their experience also with drawings ...







Demonstrating how deft and agile a fireman needs to be ...

#### At the end, we watched an animated movie – Fireman Sam – and learned to sing a song...





Children sent a clear message to everyone ...

#### - TOGETHER AGAINST FIRE-









