

BISTROUM

25. REGIJSKO SREČANJE MLADIH RAZISKOVALCEV
SPODNJEGA PODRAVJA IN PRLEKIJE V LETU 2017



ZBORNİK
POVZETKOV
RAZISKOVALNIH
NALOG

Organizator:

Znanstveno-raziskovalno središče Bistra Ptuj

Vodja projekta:

doc. dr. Štefan Čelan

Organizacijski odbor:

Rosvita Bedrač, Nataša Mršek

Tekmovanje osnovnošolcev in srednješolcev:

OŠ Gorišnica

31. marec 2017

**Uredile:**
Rosvita Bedrač, Nataša Mršek, Tina Pečnik**Fotografije:**
Matija Brodnjak, Robert Novak, Nikola Sarkičević**Statistična obdelava podatkov:**
Nataša Mršek**Grafično oblikovanje publikacije:**
Kreativni laboratorij, d.o.o., CreativeLab.si**Grafično oblikovanje zaščitnega znaka:**
studioBotas**Naklada:**
300 izvodov**Založnik:**
Znanstveno-raziskovalno središče Bistra Ptuj**Zanj:**
doc. dr. Štefan Čelan

Ptuj, maj 2017

Za vsebino in jezikovno urejenost besedil
odgovarjajo avtorji sami.CIP - Kataložni zapis o publikaciji
Univerzitetna knjižnica Maribor

001.89-053.6(497.4-18)(082)(0.034.44)

REGIJSKO srečanje mladih raziskovalcev Spodnjega Podravja in Prlekije (25 ; 2017 ; Gorišnica)

Bistroum [Elektronski vir] : zbornik povzetkov raziskovalnih nalog / 25. regijsko srečanje mladih raziskovalcev Spodnjega Podravja in Prlekije v letu 2017 ; [organizator Znanstveno-raziskovalno središče Bistra Ptuj ; uredile Rosvita Bedrač, Nataša Mršek, Tina Pečnik ; fotografije Matija Brodnjak, Robert Novak, Nikola Sarkičević ; statistična obdelava podatkov Nataša Mršek]. - Ptuj : Znanstveno-raziskovalno središče Bistra, 2017

ISBN 978-961-6253-44-4

1. Gl. stv. nasl. 2. Bedrač, Rosvita 3. Znanstveno-raziskovalno središče Bistra (Ptuj)

COBISS.SI-ID 92359681





KAZALO

MLADIM V RAZMISLEK 6

POVZETKI RAZISKOVALNIH NALOG OSNOVNOŠOLCEV IN SREDNJEŠOLCEV 8

SKUPINA A 9

SOBA ZA SPROSTITEV NA OŠ MLADIKA	10
UMETNOST UČENJA	11
IGRAJ SE Z MANO	12
POHVALA SE PO ŠOLI VALA	13
ARHITEKTURNA DEDIŠČINA PTUJA IN NJEN VPLIV NA TURIZEM	14
SKRITI KOTIČKI PTUJA	15
ZA KAJ SREDNJEŠOLCI TROŠIMO DENAR?	16

SKUPINA B 17

OBRAZI MAVRICE	18
ODNOS DO ZAJTRKOVANJA	19
TETE IZ OZADJA	20
GIBALNE AKTIVNOSTI UČENCEV 2. OŠ SLOVENSKA BISTRICA	21
ZNAČILNOSTI ANTIUTOPIJE V ROMANU RAZCEPLJENI	22
PRIMERJAVA SHAKESPEAROVIH IN PREŠERNOVIH SONETOV	23

SKUPINA C 24

PO POTEH LJUDSKIH PRAZNIKOV V LAPORJU	25
PUSTNE MASKE V OKOLICI PODGORCEV V SREDINI 20. STOLETJA	26
SEMENA PREŽIVETJA	27
PARTIZANSKA BOLNIŠNICA JESEN	28
KAKO LEPO DIŠI!	29

SKUPINA D 30

ORIGANO IN PICA KOT »RIT IN SRAJCA«	31
VPLIV GLASBE NA UČENJE IN MOZARTOV UČINEK	32
JEČMEN NI SAMO ZA V RIČET	33
MOBI – MOJ HOBI	34
PRVI POLJUB S PRAGERSKEGA	35
VRTIČKARSTVO V KIDRIČEVEM	36
VPLIV VOZNIKOV NA VARNO POT V ŠOLO	37
VINOGRADNIŠTVO V ORMOŽU IN OKOLICI	38
USTREZNOST ŠOLSKIH MIZ IN STOLOV GLEDE NA ANTROPOMETRIČNE ZNAČILNOSTI DIJAKOV GIMNAZIJE ORMOŽ	39

SKUPINA E 40

PRIMERJAVA ELASTOMOBILOV	41
RIBOLOV V PTUJSKEM JEZERU IN DRAVI	42
BARVANJE NARAVNIH IN UMETNIH TKANIN Z NARAVNIMI BARVILI	43
TARTINIJEVI TONI	44
SPLETNO NAKUPOVANJE	45
POVEJ MI GESLO, IN POVEM TI OD KOD SI	46
SFERIČNA TRIGONOMETRIJA	47
TESTIRANJE RAČINALNIŠKE IGRE LABIRINT	48
RAČUNALNIŠKA IGRA PO MERI	49

UVRSTITVE NA DRŽAVNEM SREČANJU MLADIH RAZISKOVALCEV SLOVENIJE 50

ABECEDNI SEZNAM OSNOVNIH ŠOL 51

ABECEDNI SEZNAM MLADIH RAZISKOVALCEV OSNOVNIH ŠOL 52

ABECEDNI SEZNAM MENTORJEV OSNOVNIH ŠOL 53

ABECEDNI SEZNAM SREDNIH ŠOL 54

ABECEDNI SEZNAM RAZISKOVALCEV SREDNIH ŠOL 54

ABECEDNI SEZNAM MENTORJEV SREDNIH ŠOL 54

ABECEDNI SEZNAM RECENZENTOV 55

IZVEDBO PROJEKTA SO OMOGOČILI 56

FOTOUTRINKI 57

MLADIM V RAZMISLEK ...



doc. dr. ŠTEFAN ČELAN, direktor ZRS Bistra Ptuj



Foto: Črtomir Goznik

Evropa je, v primerjavi z ostalimi regijami v svetu, na srečo še vedno svobodna in ekonomsko relativno stabilna. Kljub temu pa se mladi prvič po drugi svetovni vojni soočajo z resničnim tveganjem, da bodo njihove generacije živele v slabših pogojih kot njihovi starši. Nadalje je opazno, da Evropa zmanjšuje pomembno vlogo v svetu v primerjavi z ostalimi regijami. Leta 1922 smo Evropejci predstavljali 22 % svetovnega prebivalstva, trenutno pa nam zaradi neugodne natalitete grozi, da bomo v letu 2060 predstavljali zgolj 5 % svetovnega prebivalstva. Prav tako je pomembno vedeti, da je eno generacijo nazaj povprečni Evropejec imel eno službo v celotnem življenju, trenutno pa jih do konca življenja zamenja do deset. Globalizirano in digitalizirano gospodarstvo briše meje med zaposlenimi in samozaposlenimi. Mnoga delovna mesta, ki jih poznamo danes, pred dobrim desetletjem sploh niso obstajala. Generacije, ki danes vstopajo v osnovno šolo, bodo zagotovo iskale in našle zaposlitev na številnih delovnih mestih, ki danes sploh še ne obstajajo. Industrija S-4, ki bo temeljila na avtomatizaciji in umetni inteligenci, bo revolucionarno vplivala na številne poklice v zasebnem in tudi javnem sektorju. Vse te spremembe bodo zahtevale ogromne napore in naložbe v formalne in neformalne oblike izobraževanja. Stalnica slehernega, ki si bo želel zagotoviti dobro delovno mesto in s tem kakovostne pogoje za življenje in delo, bo vseživljenjsko učenje.

Naloge, ki so pred vami, bodo prvenstveno povezane z nenehnim inoviranjem, ki pa ga ni moč doseči brez vrhunskih formalnih in neformalnih znanj ter kompetenc.

Vsi tisti mladi raziskovalci, ki ste se že v rani mladosti odločili stopati po poti odkrivanja neznanega in to počnete zato, ker vam je raziskovanje ljubo, ste na pravi poti.

Ptuj, maj 2017

doc. dr. Štefan ČELAN

Regijsko srečanje mladih raziskovalcev
Spodnjega Podravja in Prlekije:
OŠ Gorišnica, 31. marec 2017

POVZETKI RAZISKOVALNIH NALOG

SREDNJEŠOLCEV

IN

OSNOVNOŠOLCEV

A

SKUPINA

- PSIHOLOGIJA IN PEDAGOGIKA •
- APLIKATIVNI INOVACIJSKI PREDLOGI IN PROJEKTI •
- EKONOMIJA ALI TURIZEM •

ŠOLA	NASLOV NALOGE
OŠ Mladika	SOBA ZA SPROSTITEV NA OŠ MLADIKA
OŠ Ormož	UMETNOST UČENJA
OŠ dr. Franja Žgeča Dornava	IGRAJ SE Z MANO
OŠ Središče pri Dravi	POHVALA SE PO ŠOLI VALA
OŠ Olge Meglič	ARHITEKTURNA DEDIŠČINA PTUJA IN NJEN VPLIV NA TURIZEM
OŠ Ljudski vrt	SKRITI KOTIČKI PTUJA
ŠC Ptuj, Ekonomska šola	ZA KAJ SREDNJEŠOLCI TROŠIMO DENAR?

Soba za sprostitev na OŠ Mladika



Raziskovalca: Gal Jeza, Jaka Horvat

Mentorica: Urška Hlupič Voda

Šola: Osnovna šola Mladika

Recenzentka: Klementina Pulko

Povzetek:

Namen raziskovalne naloge je bil ugotoviti, ali t. i. sprostitvena soba deluje pozitivno na učence in kako močan je njen vpliv na posameznika. Za začetek sva se seznanila s tem, kaj je to čutilna soba in kakšne učinke ima na posameznika. Nato sva sama preizkusila učinke sobe. Ugotovila sva, da je učinek res odvisen od vsakega posameznika in njegovega odnosa do dela. Do ugotovitev sva prišla z izvedbo sprostitvenih terapij in anket. Prišla sva do zaključkov, da je večina učencev, ki so izkusili terapijo, bila navdušena in se je počutila sproščeno. Ker sva lahko potrdila večino najinih hipotez, sva mnenja, da je takšna soba na naši šoli potrebna. Raziskavo lahko še razširimo s podrobnejšim opazovanjem vsakega posameznika in nadgradnjo same sprostitvene sobe.

Summary:

The purpose of the study was to determine whether the so-called relaxation room has a positive effect on students and how powerful its impact on the individual is. To begin with we researched what a relaxation room is and what are its effects on an individual. Then we examined the effects of the room for ourselves. We found that the effect really depends on each individual and their relationship to work. We came to our conclusions with implementation of relaxation therapies and surveys. We came to the conclusion that the majority of students who experienced the therapy were excited and felt relaxed. Since we were able to confirm most of our hypotheses, we believe that such a room is needed at our school. The research can still expand by a more detailed observation of each individual and by upgrading the relaxation room.

Umetnost učenja



Raziskovalke: Maša Gašparič, Nastja Meško, Hana Zajšek

Mentorici: mag. Maja Korban Črnjavič, Urška Stanko

Šola: Osnovna šola Ormož

Recenzentka: Klementina Pulko

Povzetek:

Učenje je proces, s katerim se že od rojstva vsakodnevno srečuje vsak izmed nas. S pomočjo njega postanemo to, kar smo. V raziskovalni nalogi smo raziskale učne tipe učencev Osnovne šole Ormož, zbrale strokovno gradivo o omenjenih tipih in s tem seznanile učence, njihove učitelje ter starše. Učiteljem se je zdela tematika zanimiva in uporabna, zato so nam za našo raziskovalno nalogo posredovali zanimive primere tehnik pomnjenja. Najbolj od vsega pa nas je zanimalo, ali obstaja razlika v znanju in počutju učencev, ki se učijo samo frontalno s poslušanjem, v primerjavi z učenci, ki se učijo z različnimi metodami dela. Pridobljeni rezultati jasno kažejo, da učenci, ki se učijo z večimi čutili, usvojijo več znanja in se pri tem boljše počutijo. V prid upoštevanja vseh zaznavnih sistemov pri učenju kažejo tudi opažanja po dejavnosti, ki smo jo izvedle v Vrtnu Ormož. Dr. Martin Kramar v intervjuju pravi: »Načini učenja se vedno morajo prilagoditi značilnostim učencev, vrsti (značaju) vsebine učenja in pogojem učenja.« Ravno to smo v naši raziskavi upoštevale in dokazale, da je to pot do učne uspešnosti.

Summary:

Learning is a process that each of us has been encountering since the day we were born. By learning we become who we are. In our research assignment we investigated the Primary school Ormož's students' learning types, gathered professional material concerning the mentioned types and presented the topic to the students, their teacher and parents. The teachers found the topic interesting and useful and that is why they sent us interesting memory techniques, which they use in classroom. We were mostly interested in whether there is a difference in knowledge and well-being of students who learn frontally by listening to the teacher, in comparison to the students who learn through different teaching methods. The results show that students who learn by using more senses, learn more and their well-being is better. The benefits of incorporating all perceptual systems when learning were also shown after an activity, which was conducted in Kindergarten Ormož. Dr. Martin Kramar says in his interview "Learning styles still must fit the characteristics of the pupils, the type (nature) of the content of learning and the conditions of learning." We took this into account in our research and showed that this is the way to successful learning.

Igraj se z mano



Raziskovalki: Suzana Cvetko, Lea Arnejčič

Mentorica: Zlatka Prelog

Šola: Osnovna šola dr. Franja Žgeča Dornava

Recenzentka: Klementina Pulko

Povzetek:

Inovacijski projekt, ki sva ga izdelali in oblikovali, spada na področje ozaveščanja, učenja in upoštevanja pravil, ki pripomorejo k varnejšemu, harmoničnemu, sproščenemu in varnemu sobivanju otroka s psom. Ideja je nastala na podlagi prejšnjih dveh nalog, ki sva jih ustvarili. V predlogu sva želeli ustvariti izdelek, ki omogoča spoznavanje govornice pasjega telesa ter je lahko dopolnilo učnovzgojnim dejavnostim – otrok se z veseljem igra in sodeluje v aktivnostih, ki izhajajo iz gradiva. V prvem delu so predstavljena teoretična izhodišča. V drugem delu sta predstavljena potek izdelave in preizkus v praksi, ki je bil izpeljan z namenom preveriti uporabnost idejne zasnove izdelka. Končni izdelek predstavlja škatla, ki jo sestavljajo kartice za igro Spomin, sestavljanke Spoznaj govornico pasjega telesa in sestavi odgovor ter film Igraj se z mano.

Summary:

The innovative project we have prepared and made is placed in the fields of informing, learning and adherence to rules, that aid to a safer, harmonical and relaxed coexistence between a child and adog. The idea was formed on the base of two former assignments we have made. We wanted to create a product, that helps to learn the body language of a dog, is complementary to educational practices, and the child can play and take part in activities, mentioned in the material. In the first part we have presented the theoretical guidelines. In the second part we have presented the process of product creation and a field test to test the concept idea of the product. The final product is a box, which includes a Memory cards game, puzzles Learn the body language of a dog and form an answer, and a movie called Play with me.

Pohvala se po šoli »vala«



Raziskovalki: Špela Borko, Lea Samec

Mentorica: Mateja Lašič

Šola: Osnovna šola Središče ob Dravi

Recenzentka: Klementina Pulko

Povzetek:

Raziskovalne naloge sva se lotili z namenom raziskati, kako vpliva pohvala na učence Osnovne šole Središče ob Dravi. Na naši osnovni šoli je že ustaljena praksa, da ravnateljica šole nekajkrat letno skliče pohvalno uro, na kateri se zberemo vsi učenci in učitelji šole. Namen teh ur je, da ravnateljica, mentorji in učitelji predstavijo pretekle šolske in obšolske dosežke učencev in nam izrazijo javno pohvalo za trud in uspeh na posameznih področjih. Skozi raziskovalno delo sva zastavili hipoteze, da pohvala vpliva na učence motivacijsko in spodbudno ter da si učenci želijo biti pohvaljeni na pohvalnih urah. Predvidevali sva, da učencem šole največ pomeni javna pohvala ravnateljice in da učenci, ki na pohvalnih urah niso pohvaljeni, zavidajo učencem, ki so pohvaljeni. Po temeljitem pregledu teoretičnega dela o pohvalah sva se lotili raziskave. Svoje hipoteze sva dokazovali s pomočjo spletnega anketnega vprašalnika za učence in vprašalnika za učitelje, s pomočjo intervjuja z ravnateljico OŠ Središče ob Dravi in s pomočjo zbiranja informacij, kako pohvale izrekajo po drugih osnovnih šolah. Ugotovili sva, da pohvale motivirajo učence za nadaljnje šolsko in obšolsko delo, da jim največ pomeni pohvala ravnateljice na pohvalni uri in da učenci, ki na pohvalnih urah niso pohvaljeni, ne zavidajo pohvale svojim sošolcem, temveč so za njih veseli in jim celo čestitajo. V tem delu tako te hipoteze nisva mogli potrditi. Tako učenci kot tudi učitelji na naši osnovni šoli menijo, da bi pohvalne ure morale ostati še v prihodnje, saj so mnenja, da na učence dobro vplivajo.

Summary:

We started this research paper in order to explore the impact of praise on students in elementary school Središče ob Dravi. In our elementary school it is already common practice to headmistress to gather all the pupils and teachers of the school for few times a year to convene a praise hour. The purpose of these hours is that the headmistress, mentors and teachers present past school and extracurricular achievements of pupils and publicly express praise for their efforts and success in specific areas. Through research, we have set the hypothesis that praise impacts on students motivational and supportive and that pupils wish to be praised in those hours. We assumed that for the school's students is the most important public praise of the headmistress and the students, who are not praised in praise hours envy the students who are praised. After a thorough review of the theoretical part of the praise we started with the research. We proved our hypotheses using an online questionnaire for students and a questionnaire for teachers, through an interview with the headmistress of Središče ob Dravi primary school and through the collected information, how is with the praise on the other elementary schools. We have found that praise motivates students for further academic and extracurricular work. The most important for them is the praise of the principal in praise hours and that students who are not praised in the praise hours are not envious to their classmate, but are happy for them and congratulate them. In this section, we couldn't confirm our hypothesis. Both students and teachers in our elementary school believe that praise hours should remain in the future, as they think that these praise hours have good influence on the pupils.

Arhitekturna dediščina Ptuja in njen vpliv na turizem



Raziskovalca: Neja Veit, Anej Podgorelec

Mentorica: Mateja Simonič

Šola: Osnovna šola Olge Meglič

Recenzentka: Anja Potočnik

Povzetek:

V raziskovalni nalogi proučujemo arhitekturno dediščino Ptuja in njen vpliv na turizem. Ptuj kot najstarejše mesto v Sloveniji sodi med pomembnejše turistične kraje v Sloveniji. Mesto pritegne obiskovalce z bogato zgodovinsko, stavbno in kulturno dediščino. Bogata arhitekturna dediščina je nastajala in se pod vplivom različnih arhitekturnih slogov oblikovala skozi dolga stoletja. Arhitekturna dediščina in turizem sta izjemno povezana. Turizem je lahko odlično orodje za ohranjanje, obnavljanje in vzdrževanje monumentalne dediščine, saj kot specifičen gospodarski sektor spodbuja predvsem medkulturno spoznavanje in razumevanje. Turiste na Ptuj pritegnejo grad in staro mestno jedro, muzejske zbirke ter sakralna dediščina. Skrbno sva izbrala tisto arhitekturno dediščino, ki se ponaša z izjemnim zgodovinskim pomenom. V nalogi s pomočjo predelave literature in metodo intervjuja obravnavava obstoječo turistično ponudbo v povezavi z arhitekturno dediščino in hkrati navajava predloge, ki bi izboljšali trenutno stanje. Analizirava turistični potencial na Ptuj ter možnosti uresničitve le-tega. Z raziskavo ugotoviva, da ima Ptuj še veliko neizkoriščenega potenciala na področju turizma in premalo mero promocije.

Summary:

The architectural heritage of Ptuj and its impact on tourism is the topic of our research paper. Ptuj, as the oldest town in Slovenia, is one of the most important tourist resorts in Slovenia. The tourists are attracted by city's rich historical, monumental and cultural heritage. Rich architectural heritage was being made and influenced by many different architectural styles during long centuries. Architectural heritage and tourism are remarkably coherent. Tourism can be a perfect instrument for preserving, renovating and maintaining monumental heritage because of its specific role - tourism as economic activity can promote intercultural recognition and understanding. Tourists visiting Ptuj are attracted by the castle and the old city centre, museum collections and sacral heritage. We selected only architectural heritage with remarkable historical impact. In our research paper we have discussed present tourist offer in connection with architectural heritage by the method of literature and the interview. At the same time we have also named the suggestions how to improve present conditions. We have analysed tourist potential of Ptuj and possible solutions. We have found out that Ptuj has got a lot of unexploited potentials and not enough of promotion in tourism.

Skriti kotički Ptuja



Raziskovalki: Jana Repič, Nina Ber

Mentorici: Martina Prejac, Elka Mlakar

Šola: Osnovna šola Ljudski vrt Ptuj s podružnico Grajena

Recenzentka: Anja Potočnik

Povzetek:

Kaj ponuditi turistom, česar jim potovalne agencije in internet ne morejo? Nekaj posebnega, drugačnega od vsakdanjih turističnih ponudb. Kaj nam ponuja mesto Ptuj? Kaj bi pritegnilo na Ptuj še več turistov? Nam ponuja kaj novega, neznanega, do nedavnega skritega, neraziskanega? Odgovore in rešitve na ta vprašanja imamo mi, TURISTIČNI PODMLADKARJI. Odločili smo se, da mesto Ptuj predstavimo v drugačni luči. Obiskali smo različne skrite kotičke Ptuja, ki jih bomo v nadaljevanju tudi podrobno predstavili. Na zanimiv način vas bomo popeljali v svet teh skritih kotičkov ter v svoj program vodenja vključili še vsaj eno že znano znamenitost Ptuja. Naredili smo natančen programski in finančni načrt vodenja.

Summary:

What to offer tourists that other travel agencies and the internet can't? Something special and different from everyday tourist offers. What does the city Ptuj offer us? What would attract more tourists to Ptuj? Does Ptuj offer us something new, unknown, until recently hidden, undiscovered? We have the solutions and answers to those questions. We decided to present Ptuj in a different light. We visited different hidden places of Ptuj which we will describe in detail later. In a new and interesting way we will lead you into a world of hidden places and include at least one already known attraction of Ptuj. We made a detailed program and financial plan of management. So we invite you to spend a beautiful day with us discovering the secret places of Ptuj.

Zakaj srednješolci trošimo denar?



Raziskovalki: Sara Mlakar, Sara Novak

Mentorici: Patricija Koler, Milica Selinšek

Šola: Šolski center Ptuj, Ekonomska šola

Recenzentka: dr. Lidija Tušek

Povzetek:

Tema raziskovalne naloge so potrošniške navade srednješolcev. Prav tako pa je to še zelo neraziskana tema, kar nama je predstavljajo velik izziv. Izvedeti sva želeli, za kaj srednješolci trošijo svoj denar, koliko in kje ga porabijo ter od kod ga dobijo. Po analizi vseh podatkov sva ugotovili, da so dijaki zelo družabni, saj največji delež mesečnih prihodkov potrošijo za zabavo. Največje mesečne prejemke izmed vseh zajetih šol prejemajo dijaki Ekonomske šole – programa PTI, najmanjše pa gimnazijci. Oblačila najpogosteje nakupujejo v trgovini New Yorker, hrano in pijačo pa v neposredni bližini šole. Dijaki razmišljajos svojo glavo in se ne odločijo za nakup zaradi drugih. Meniva pa, da bi bilo potrebno mladino osveščati o pametnejšem in enakomernejšem razpolaganju z denarjem, da bi večji delež njihovega mesečnega prejemka namenili varčevanju.

Summary:

The theme of our research paper is titled: Consumer habits of high school students. Also, this theme has not been researched a lot, which has proven us a challenge. We wanted to find out, in what do our high school students invest their money in, how much and where do or from whom do they get it? After our analysis of information, we have found out, that our students are very social, because they spend most of their monthly pocket money for fun and parties. The most pocket money from all of our interviewed high school students are getting the students from The Secondary School of Economics – PTI program, and the least pocket money are getting the students from the Grammar School. They mostly get their clothes from Ney Yorker and they buy their foods and drink from the school area. The students are thinking with their own heads, so they don't buy what others tell them to. We think, that it would be smart to inform our youth to spend their money more wisely, so that they would have more money to save.

• SOCIOLOGIJA • • SLOVENSKI JEZIK ALI KNJIŽEVNOST •

ŠOLA	NASLOV NALOGE
OŠ Ormož	OBRAZI MAVRICE
OŠ Gustava Šiliha Laporje	ODNOS DO ZAJTRKOVANJA
OŠ Ormož	TETE IZ OZADJA
2. OŠ Slovenska Bistrica	GIBALNE AKTIVNOSTI UČENCEV 2. OŠ SLOVENSKA BISTRICA
OŠ Pohorskega odreda Slovenska Bistrica	ZNAČILNOSTI ANTIUTOPIJE V ROMANU RAZCEPLJENI
Gimnazija Ormož	PRIMERJAVA SHAKESPEAROVIH IN PREŠERNOVIH SONETOV

Obrazi mavrice



Raziskovalki: Lea Husel, Zala Cunk

Mentorja: Aleksandra Kociper, Aleksander Šterman

Šola: Osnovna šola Ormož

Recenzentka: Klavdija Srša

Povzetek:

Drugačnost je izziv v vseh pogledih. Je izziv za tistega, ki je drugačen, in izziv za tiste, ki se jo trudijo sprejemati. Z razvojem na različnih področjih se razvija tudi miselnost človeka. Ljudje vse bolj sprejemamo drugačnost, a je žalostno, da nekateri istospolno usmerjeni, še zmeraj živijo dvojno življenje. Prikazujejo se kot heteroseksualci, čeprav so v sebi istospolno usmerjeni – homoseksualci – in zato niso prav nič manj vredni. Vse to počno zaradi ljubega miru! Mi – mladi – pa smo tisti, ki lahko s svojim delovanjem v družbi posredujemo svoja razmišljanja in morda na nek način poskrbimo, da bomo vsi bolj spoštljivi, strpni in prijazni do sočloveka – ne le istospolno usmerjenega, ampak vsakega, ki je drugačen od nas, od naših meril, odstopajoč od družbene zaželenosti. Potrudimo se in tudi njim dovolimo, da zaživijo svoje življenje – svoje sanje! Raziskovali sva poznavanje področja homoseksualnosti in homofobije. Želeli sva ugotoviti, ali najini vrstniki in starejši razumejo pojem homoseksualnost, ali imajo do homoseksualcev predsodke, strahove ali pomisleke. Ob vsem tem pa sva želeli vrstnikom razširiti obzorja in jim prikazati, da je normalno biti drugačen in da je vsak lahko to, kar je. V raziskovalni nalogi sva uporabili metodo anketiranja, intervju in skupinski pogovor (metoda fokusnih skupin). Ugotovili sva, da velika večina anketirancev pojem homoseksualnost pozna in je do tega področja pozitivno naravnana. Ugotovili sva tudi, da se odgovori na mnoga vprašanja zelo razlikujejo – glede na spol ali pa na starost anketiranca. Večinoma so anketiranci za istospolno poroko, ampak so proti posvojitvi otrok. Najin cilj je bil, da izveva, ali anketiranci poznajo pojma homoseksualnost in homofobija in ali so do tega področja pozitivno ali negativno naravnani, in to sva tudi dosegli.

Summary:

Being different is a challenge in every aspect. It is a challenge for everyone, for people who are different and for those who are trying to accept them. With the development in various fields we are also developing the mentality of man. People are increasingly accepting diversity, but it is sad that some homosexuals are still living a double life. They appear as heterosexuals, although on the inside they are homosexual - gay - and therefore not at all inferior. All of doing for the sake of peace! We - young people - are the ones who by their functioning in society forward our thinking and maybe in some way we make sure that we are all more respectful, tolerant and kind to other people - not only homosexual, but anyone who is different from us according to our criteria, diverging from social desirability. We try and allow them to live their own lives - their dreams! We studied knowledge of the field of homosexuality and homophobia. We wanted to determine whether our peers and older people understand the concept of homosexuality or homosexuals to have prejudices, fears or concerns. Besides all this, we want our peers to expand their horizons and show them that it is normal to be different and everyone is allowed to be themselves. In our research paper we have used the association technique, a questionnaire, an interview, a group method called focus group and an experiment.

Odnos do zajtrkovanja



Raziskovalki: Sara Bevc, Katja Košič

Mentorica: Mateja Zupanec

Šola: Osnovna šola Gustava Šiliha Laporje

Recenzentka: Klavdija Srša

Povzetek:

Za raziskovanje odnosa do zajtrkovanja sva se odločili, ker sva opažali, da učenci pogosto hodijo v šolo lačni in le stežka zdržijo do malice oziroma do prvega odmora, ko dobimo sadje. Na to pogosto opozarjajo tudi učitelji. Zanimalo naju je, kakšno je dejansko stanje na naši šoli. Namen najine raziskovalne naloge je raziskati, koliko učencev naše šole zajtrkuje in koliko učencev ne zajtrkuje, zakaj nekateri ne zajtrkujejo, ali se učenci zavedajo pomena zajtrkovanja in kako učence, ki ne zajtrkujejo prepričati, da je zajtrkovati pomembno in da bi zajtrk morali redno uživati. Učencem sva pripravili anketo ter iz odgovorov ugotovili, kako se rezultati razlikujejo glede na spol in starost. Po branju literature sva si zastavili štiri hipoteze: vsak dan zajtrkuje manj kot polovica anketiranih, starost in spol učencev vplivata na pogostost zajtrkovanja, starost in spol učencev vplivata na zavedanje pomembnosti zajtrkovanja in učenci raje izberejo nezdrav zajtrk (glede na Smernice zdravega prehranjevanja v vzgojno-izobraževalnih ustanovah). S pomočjo anketnega vprašalnika, ki sva ga izvedli med učenci in učenkami 4., 5., 6., 7., 8. in 9. razreda, sva prvo hipotezo ovrgli, drugo in tretjo delno potrdili in četrto potrdili. Ugotovili sva, da se večina učencev zaveda pomena zajtrka, ampak nekateri vseeno ne zajtrkujejo. Glede na ugotovitve na pogostost zajtrkovanja vpliva predvsem starost, saj so skoraj vsi učenci pogosteje zajtrkovali, ko so bili mlajši, presenečeni pa sva bili, da na pogostost zajtrkovanja spol ne vpliva tako zelo, kot sva pričakovali. Prav tako sva ugotovili, da učenci vedo, kaj in kateri je zdrav zajtrk, ter da zdravo zajtrkuje manj učencev. Da bi zdravo zajtrkovalo več učencev, sva s pomočjo mentorice na našo šolo vpeljali novo dejavnost: priprava zdravih zajtrkov. Druženje učencev ob pripravljanju zdravega obroka se odvija vsak petek pred poukom.

Summary:

We decided to investigate the attitude towards eating breakfast, because we noticed that students come to school hungry and can hardly wait for the snack or fruit break. Teachers often warn about that. We were interested what the actual condition at our school is. The aim of our research paper is to investigate how many students at our school have breakfast and how many students don't, why they don't, are they aware of the meaning of having breakfast and how to persuade those students that don't have breakfast that it is important to do so and that they should have it on a regular basis. We did a survey and came to conclusion that results are different according to sex and age. After reading the literature we set four hypothesis: less than half of the students taking part in the survey have breakfast every day, age and sex influence the frequency of having breakfast, age and sex of students influence the awareness of importance of having breakfast and students rather choose unhealthy breakfast (according to the Guidelines for healthy nutrition in educational institutions). With help of the survey performed among the students of classes 4, 5, 6, 7, 8 and 9. We disproved the first hypothesis, partially confirmed the second and third and confirmed the fourth. We found out that most of the students are aware of the meaning of having breakfast, but some still don't have breakfast. According to the findings, age mostly influences the frequency of having breakfast, because almost everyone had more regularly breakfast when they were younger, but we were surprised to find out that sex does not influence the frequency of having breakfast so much, as we expected. We also established that students know what and which is a healthy breakfast and that fewer students have a healthy breakfast. For more students to have a healthy breakfast, we introduced a new activity at our school with help of our mentor: making a healthy breakfast. Socializing students while preparing healthy meal is taking place every Friday before classes start.

Tete iz ozadja



Raziskovalke: Larisa Šek, Hana Potočnjak, Nina Bokša

Mentorici: Sanja Miškovič, Kristina Podgorelec

Šola: Osnovna šola Ormož

Recenzentka: Klavdija Srša

Povzetek:

Prijatelj je kot senca, ki te spremlja povsod. Ko ti je lepo, skupaj uživata, ko ti je težko, te potolaži, je tvoja rama, na kateri lahko potočiš solzo. Prijatelje potrebujemo, saj brez njih skoraj ne moremo. Včasih se pripodi nad nas oblak, ki prekrije sonce in prežene našo srečo. Takrat izgine tudi naša senca. Prijatelj se potuhne in nas pusti, da sami rešujemo težave in se spopadamo s tistimi, ki niso prijazni do nas, in nam spodmakne ramo, na kateri bi jokali. Takrat naša senca pobegne. Ne zapusti nas, samo malo se potuhne. Pusti nas, da se znajdemo sami, saj tako postajamo močnejši, odgovornejši, zrelejši. Včasih se namesto prijatelja pojavi »teta«. Pa ne kakšna prijazna, ki bi nam ponudila bonbone ali košček čokolade, nam namenila besedo tolažbe ali nam popihala potolčeno koleno. Pojavi se »teta«, ki ni prijazna, ki od nas zahteva nekaj, česar ne znamo, ne moremo ali nočemo narediti. Zahteva, da smo nesramni do drugih, nas izsiljuje, grozi, da bo drugim povedala našo skrivnost. V strahu, da tega ne bi storila, naredimo tudi kaj, za kar vemo, da ni prav, s čimer prizadenemo druge, jih naredimo nesrečne in smo nesrečni tudi sami. Smo nasilni, ker nam je »teta« tako ukazala. Počnemo nekaj, česar sicer ne bi, ker je do nas nesramna, ker je močnejša od nas – bodisi fizično ali verbalno. Ne poznamo načinov, kako bi se temu izognili, ne vemo, komu lahko zaupamo, kdo nam lahko pomaga. Vendar vedimo, vedno je nekdo, ki nam lahko pomaga, da se bomo opogumili in takšni »teti« rekli NE. Ji rekli in pokazali, da nismo nasilni, da se znamo postaviti zase na primeren način – tako, da nikogar ne prizadenemo. Vedno je kje tudi dobra, poštena, prijazna teta, ki nam bo pomagala, da se bomo izognili temu, da smo žrtev ali nasilnež, in nam bo pokazala pravo pot v življenju. Samo dovoliti si moramo, da jo najdemo, moramo ji prisluhniti in tako bomo sebe in marsikoga v svoji bližini rešili težav, ki jih s sabo nosi nasilje.

Summary:

A friend is like a shadow who never leaves your side. When you feel good, you enjoy each other's company, when you're down a friend helps you get up and gives you a shoulder to cry on. We need friends and can't live without them. Sometimes the clouds rush upon us that block the sunlight and banish our happiness out of our lives. Then our shadow disappears. Our friend backs out and leaves us to solve our problems alone and fight those who make us feel bad and removes the shoulder that we used to cry on. That's when or shadow escapes. It doesn't leave us, just backs out a little bit and leaves us to cope with our problems alone, because that is how we get stronger, more responsible and mature. Instead of a friend there is sometimes an "aunt". Not a nice one, who would offer us sweets or a piece of chocolate, say a nice word of comfort and blow on a wounded knee. An aunt that appears isn't nice and wants us to do something that we otherwise aren't able, can't or wouldn't do. She demands that we are rude to people, blackmails us and threatens to reveal our secret. In this fear we do things that are wrong. We hurt people, make them unhappy which also reflects in our misery. We are violent because she told us to be. We do things we normally don't, because she is mean and stronger – physically or verbally. We don't know the ways to avoid that, who to trust and who can help us. We should know that there's always someone who can help us and encourage us to say NO to an aunt. Show her that we aren't violent, that we can stick up for ourselves in an appropriate way so nobody gets hurt. There's always a nice, honest and kind aunt who will help us avoid being a victim or a bully and show us the right way. We should let ourselves find her and listen to her to save us from troubles that bring violence.

Gibalna aktivnost učencev 2. osnovne šole Slovenska Bistrica



Raziskovalka: Lana Simonič

Mentor: Igor Keber

Šola: 2. osnovna šola Slovenska Bistrica

Recenzentka: Klavdija Srša

Povzetek:

Gibanje je za mladostnika pomembno. Gibanje bo pozitivno vplivalo na razvoj sklepov, mišic na razvoj motoričnih in finomotoričnih sposobnosti. Gibanje pozitivno vpliva na razvoj možganov in sposobnost za učenje. Raziskave kažejo, da otroci, ki so telesno aktivni si prej in lažje zapomnijo novo snov, lažje sledijo pouku v šoli, prav tako pa gibanje preprečuje povišano telesno težo in debelostjo. V nalogi me je zanimalo koliko so otroci 2. osnovne šole Slovenska Bistrica telesno aktivni in kako šola vzpodbuja gibanje za svoje učence. Da sem svojo idejo uresničila sem morala s pomočjo virov in literature ugotoviti, kaj je o tem že zapisanega, kasneje sem šla raziskovati s pomočjo ankete in intervjuja koliko so naši otroci gibalno aktivni. Ugotovila sem, da slovenska šola na splošno in 2. osnovna šola Slovenska Bistrica zelo spodbujata gibanje že z osnovnim učnim programom. Večina šol ima poleg osnovnega gibalnega predmeta šport tudi dodatne predmete kot so izbrani šport, šport za zdravje ter šport za sprostitvev. Nekatere šole so vključene tudi v različne projekte kot so Zdrav življenjski slog, FIT Slovenija, simbioza gibanja itd. 2. osnovna šola še dodatno spodbuja gibanje z udeležbami na športnih tekmovanjih, z interesnimi dejavnostmi kot je ciciban planinec ter z aktivnimi šolskimi strokovnimi ekskurzijami. Ugotovila sem, da gibanje s starostjo učencev upada, kar pa je verjetno posledica več dejavnikov. Nalogo sem sklenila, da se ljudje gibamo na različne načine in, da je včasih lahko že preprost domač gospodinjski opravek gibanje. Prav tako pa bi z več gibanjem pomagali našemu planetu k hitrejšemu okrevanju.

Summary:

Movement is important for the growing child. It will have a positive impact on the development of joints, muscles, motor and fine motor skills. Movement has a positive effect on the brain development and the ability to learn. Research shows that children who are physically active learn new material more quickly and easily. They follow the lessons in school better. Movement also prevents excess body weight and obesity.

In this work I, have been interested in what extent students of 2. osnovna šola Slov. Bistrica (The 2nd Primary School of Slovenska Bistrica) are physically active and how the school encourages movement of their students.

First, I read different sources and literature. Then I started to investigate how physically active our children are using questionnaires and interviews.

I found out that Slovenian school in general and The 2nd Primary School of Slovenska Bistrica highly encourage movement. It is a part of basic school curriculum. In addition to basic movement subject Sport, most schools have additional subjects, such as many optional subjects, Sport for health and Sport for relaxation. Some schools are also involved in various projects such as Healthy lifestyle, FIT Slovenia, Symbiosis Movement etc.

The 2nd Primary School of Slovenska Bistrica also encourages movement with participation in sports competitions, interest activities such as ciciban mountaineer and active school excursions.

I found out that the movement is declining with children getting older, which is probably the result of several factors. As a conclusion I can say that people exercise in different ways and that sometimes a house chore can be an exercise as well. By moving more, we could also help our planet to faster recovery.

Značilnosti antiutopije v romanu Razcepljeni



Raziskovalka: Tinkara Novak

Mentorica: Nina Ančič

Šola: Osnovna šola Pohorskega odreda Slovenska Bistrica

Recenzentka: Darja Plajnšek

Povzetek:

Raziskovalna naloga se ukvarja z žanrskostjo v romanu Razcepljeni, katerega avtorica je Veronica Roth. Prvi del raziskovalne naloge, teoretični del, razloži, zakaj to delo uvrščamo med antiutopična dela in predstavi kratek razvoj od utopije do antiutopije. Predstavi literarne pojme, ki so pogosto povezani z romanom Razcepljeni, npr. antiutopija, znanstvena fantastika, prehodna literatura ipd. Vsebuje tematsko analizo, ki se osredotoča še posebej na teme, ki jih lahko velikokrat najdemo v antiutopičnih delih. Drugi del raziskovalne naloge se ukvarja s priljubljenostjo knjig z antiutopičnimi temami in raziskuje, ali so takšne knjige pri nas priljubljene v primerjavi s tujino, kjer na internetnih straneh zasledimo veliko strani, posvečenih antiutopičnim romanom. Glede na teme v romanu Razcepljeni spada leta v žanr antiutopičnega romana in predvidevali smo, da so take knjige pri najstnikih priljubljene prav zaradi tem. K priljubljenosti knjig pripomorejo tudi filmi, posneti po njih. Z metodo ankete smo ugotavljali, kako so sprejeli trilogijo in film osmošolci in devetošolci naše šole. O romanu in njegovi priljubljenosti pa smo se pozanimali tudi v Mariborski knjižnici, v oddelku Rotovž. Hoteli smo tudi izvedeti, ali so antiutopična dela priljubljena le kratkoročno, kar se je izkazalo za trd oreh.

Ugotovili smo, da so antiutopije za mlade bralce priljubljene zaradi filmov, posnetih po knjigah, in hkrati tudi zaradi nekaterih tem, ki so značilne za ta žanr. Najprej si najstniki ogledajo film, ker jim je ta všeč, pa preberejo še knjigo. Tistim, ki je prvi del trilogije všeč, preberejo še ostala dela. Zgolj posamezni bralci poročajo o vplivanju knjig na njihovo razmišljanje ali čustvovanje.

Summary:

This research paper deals with the genre of the novel *Divergent* by Veronica Roth. The first part of the research paper, the theoretic part, explains why this work belongs to dystopian works and introduces the development from a utopia to dystopia. It also introduces literary terms that are often associated with the novel *Divergent* e.g. dystopia, science-fiction, young adult fiction, utopia. It includes a thematic analysis, which focuses on the themes that can be often found in dystopias. The second part of the research paper deals with the popularity of dystopian books and researches whether the books like that are popular here compared to abroad, since we can find on the internet many websites dedicated to dystopias. According to the themes in the novel, *Divergent* is a dystopian novel and we have presumed that such books are popular amongst teenagers because of the literary themes. Films that are based on the books also contribute to the popularity of the books. With a survey we have found out how the trilogy and the film was received by the 8th and 9th grade students of our school. We have also asked about the popularity of the novel itself in Mariborska knjižnica Rotovž. We have also wanted to find out whether dystopian works are popular only in the short term which has turned out to be a hard nut to crack.

We have found out that dystopian books are popular because of the films based on the books and because of some themes that are typical for dystopias. Teenagers first watch a film, then they read a book. Those who like the first part of the trilogy, read the other parts too. Only some readers report about books influencing their thoughts and emotions.

Primerjava Prešernovih in Sheakespearovih sonetov



Raziskovalka: Zala Ledinšek

Mentorica: mag. Aleksandra Štih

Šola: Gimnazija Ormož

Recenzentka: Darja Plajnšek

Povzetek:

Namen raziskovalne naloge je najti podobnosti motivov in tem v Shakespeareovih in Prešernovih sonetih. Oba poeta sta znana po njunih ljubezenskih pesnitvah, prav tako po nesrečni ljubezni, zato me je zanimalo, če sta se tematike lotila na podoben način. Med soneti sem primerjala teme, glavne motive in ideje. Prav zaradi velikega vpliva ljubezni na njuno življenje in pesnjenje sem se odločila posebno pozornost nameniti prav tej temi. Sonete sem najprej skrbno prebrala, Shakespeareove tudi v originalni angleški verziji. Izbrala sem Shakespeareove 18., 23., 57., 61., 71., 75., 91., 105., 116., 147. in 150. sonet ter Prešernova cikla Sonetni venec in Sonetje nesreče, iz njih izluščila osrednjo temo, nato še glavne ter osrednje motive. Po ponovnem branju sem sonete interpretirala in analizirala. V teoretičnem delu sta predstavljeni književni obdobji - renesansa in romantika. Sledi kratek življenjepis pesnikov, kjer so vključeni tudi dogodki, ki so močno vplivali na njuno pesniško ustvarjanje. Nato so v poglavju Analiza sonetov predstavljeni izbrani soneti. Zapisan je njihov nastanek, izpeljana je vsebinska interpretacija in razčlenjeni so motivi, teme in ideje. Posebno poglavje je namenjeno primerjavi Shakespeareovih in Prešernovih sonetov. V primerjavo je vključena pogostost tem, motivov in idej ter njihove podobnosti in razlike. Ugotovljeno je bilo, da sta njuni skupni temi ljubezen in smrt, čeprav ju izražata na različne načine. Prešernova ljubezen prinaša nesrečo in pesimističen pogled na svet, čeprav ga ljubezenska čustva do Primičeve Julije tudi navdihujejo. Shakespeara pa ljubezen do mladeniča (platonična ali romantična) osrečuje in navdihuje za življenje in pisanje. Smrt Prešernu predstavlja odrešitev in srečo po nesrečnem in trpečem življenju, medtem ko Shakespeare smrti ne izpoveduje tragično, saj je le končna postaja življenja. Domovinska tema pa je prisotna le v Prešernovih sonetih.

Summary:

The research paper's main purpose is to find similarities between Shakespeare's and Prešeren's sonnets. Both poets are well known for their love poetry as well as their misfortune in the affairs of romance, which made me curious if they addressed the theme of love in a similar way. I compared the themes, motives and ideas in the sonnets, paying special attention to the theme of love, which had a great impact on both their lives. First I read the sonnets very carefully, Shakespeare's even in the original English version. I chose his 18th, 23rd, 57th, 61st, 71st, 75th, 91st, 105th, 116th, 147th and 150th sonnets as well as Prešeren's Wreath of Sonnets and Sonnets of Unhappiness. From them I extracted the central theme and the main motives. Upon rereading I interpreted and analyzed the sonnets. The theoretical part introduces the basic characteristics of the Renaissance and Romanticism movements. Following that is a short biography of both authors that also includes key events that played a large part in the making of their poetry. The chosen sonnets are introduced in the chapter Analysis. Their origin is introduced, as well as their contextual interpretation and motives, themes and ideas. A special chapter is dedicated to the comparison of Shakespeare's 5 and Prešeren's sonnets. The comparison includes the frequency of those themes, motives and ideas and the similarities and differences between them. It was concluded that the common themes of the poets are love and death, although they express them in different ways. Prešeren's love brings him misery and a pessimistic outlook on life, but his feelings for Primičeva Julija are still a source of inspiration. Shakespeare's love for the young man (platonic or romantic) on the other hand is a source of inspiration, but joy as well, for life and writing alike. Death for Prešeren symbolizes salvation in happiness after an unhappy and miserable life, while Shakespeare doesn't see death as tragic, but just as the final stage of life. The theme of homeland appears only in Prešeren's sonnets.

C

SKUPINA

• ETNOLOGIJA •
• ZGODOVINA
ALI UMETNOSTNA ZGODOVINA •

ŠOLA	NASLOV NALOGE
OŠ Gustava Šiliha Laporje	PO POTEH LJUDSKIH PRAZNIKOV V LAPORJU
OŠ Velika Nedelja	PUSTNE MASKE V OKOLICI PODGORCEV V SREDINI 20. STOLETJA
OŠ Hajdina	SEMENA PREŽIVETJA
2. OŠ Slovenska Bistrica	PARTIZANSKA BOLNIŠNICA JESEN
OŠ Kidričevo	KAKO LEPO DIŠI!

SKUPINA

C

Po poteh ljudskih praznikov v Laporju in okolici



Raziskovalki: Karolina Leskovar, Blažka Gradič

Mentorica: Marjetka Čas

Šola: Osnovna šola Gustava Šiliha Laporje

Recenzentka: Barbara Rižnar

in praznovanja posveti poseben poudarek. Zavedava se, da je poznavanje naše kulturne dediščine zelo pomembno, vpliva lahko tudi na različna področja gospodarstva, kot sta turizem in podjetništvo, ki bosta v prihodnje dajala kruh tudi marsikomu izmed nas.

Povzetek:

Namen najine raziskovalne naloge z naslovom Po poteh ljudskih praznikov v Laporju in okolici je bil, da podrobneje raziščeva, kakšen je bil pomen praznikov, kako jih razvrščamo in kateri so najpomembnejši prazniki. Osvetliti sva želeli, kako so naši starši in stari starši praznovali praznike. Zanimalo naju je, ali se je na dan praznika zbrala vsa družina, kakšne obrede so izvajali ob določenih praznikih in katere tradicionalne jedi so pripravljali. Prav tako sva želeli izvedeti, ali so otroci za miklavževo in za božič dobili kakšna darila in ali so na dan kolin otroci lahko ostali doma. Raziskati sva želeli, ali učenci zadnjega vzgojnoizobraževalnega obdobja poznajo stare ljudske praznike in po čem se prazniki in praznovanja v preteklosti razlikujejo od današnjih. Dela sva se lotili z zbiranjem virov in literature. Na terenu sva obiskali informatorje in jih intervjuvali. Nato sva izvedli anketo med starši in učenci 7., 8. in 9. razreda, s katero sva želeli ugotoviti, kako so praznovali nekoč in kako praznujemo danes. Na koncu sva uporabili še metodo analize in sinteze podatkov. Raziskovalni intervju sva opravili s štirimi informatorji: z gospo Marijo Onič, Ano Gradič in Marijo Majer ter z gospodom Janezom Osvaldom. Povedali so nama, da so bili prazniki, ki so jih praznovali, povezani predvsem z vero, da so samo za praznike pripravljali tradicionalne jedi in da so se na praznike vedno posebej pripravljali. Vsi intervjuvanci so potrdili, da je zelo pomembno ohranjanje tradicije in da je še kako pomembno, da nekatere stare, skoraj že pozabljene ljudske praznike, ponovno obudimo v življenje. Iz analize ankete sva ugotovili, da večina anketirancev praznike pozna, praznujejo pa le še posamične. Nekaterih več ne praznujejo, ker so izgubili svoj prvotni pomen. Večina anketirancev praznuje praznike v ožjem družinskem krogu. Anketirancem praznovanje praznikov pomeni druženje z družino in poglobljanje medsebojnih odnosov, obdarovanje, pomembno pa je tudi ohranjanje tradicije. Anketiranci menijo, da nekateri prazniki gredo v pozabo, saj so izgubili svoj prvotni pomen in tradicija ljudi več toliko ne zanima, vera pa izgublja svojo moč. Anketiranci bi praznike ponovno obudili na ta način, da bi izkoristili vpliv medijev na ljudi in s pomočjo različnih projektov. Turistično društvo bi lahko organiziralo praznovanje starih ljudskih praznikov s prikazom šeg in navad. Prišli sva do ideje, da bova na šolski skupnosti predlagali tehniški dan, na katerem bomo osvetlili pomembne ljudske praznike v Laporju in okolici v preteklosti in medse povabili starše in stare starše. Prav tako bova pri izbirnem predmetu Etnologija – kulturna dediščina in način življenja predlagali učiteljici, da se tematiki ljudski prazniki

Summary:

The aim of our research was to find out, what the meaning of celebrations was, how they are classified, and what the most important celebrations in our surroundings are. We wanted to discover how holidays were celebrated by our parents and grandparents, who attended celebrations, what ceremonies they performed and what traditional meals they cooked. We were interested in St. Nicholas and Christmas traditions and whether the children were given some gifts, and what those gifts were. We were also interested if children were allowed to stay at home during slaughtering. We wanted to find out in what extend pupils from last three forms know old traditions, and the differences in celebrating them now and in the past. The following research methods were used: the method of qualitative data and literature analysis, the questionnaire research method, the method of using an informer and the method of analysis and synthesis at the end. Research interview was used with four informers: Ms. Marija Onič, Ana Gradič in Marija Majer and Mr. Janez Osvald. We discovered that celebrations in the past were mostly related to religious beliefs, traditional meals were usually cooked only for holidays and people spent a great amount of time for holiday preparations. Everyone agreed that the preservation of the traditions is of extreme importance and revival of some forgotten traditions should be considered. The questionnaire research method showed, that the majority of interviewees know the celebrations of the past, but only a few are still celebrated today. Most of them celebrate them in a family circle, and the main aim of celebrations is to spend time with family, to deepen the tights of family relations and to preserve some traditions. Interviewees think that some celebrations are to be forgotten, firstly while some of the traditions lost their original meaning, secondly because of people's decreased interest in traditions and thirdly, because of the transformation of a society from close identification with religious values toward nonreligious values. Interviewees suggested to take advantage of media while bringing back traditional celebrations. Tourist associations could play a role in it by organizing celebrations according to old folk customs. Pupils of our school are going to suggest a technical day with the topic of old folk celebrations. We are going to propose to the teacher to focus more on that topic during Ethology classes. We are aware that the understanding of old folk traditions plays an important role in many different aspects of life like tourism, entrepreneurship and economy.

Pustne maske v okolici Podgorcev v sredini 20. stoletja



Raziskovalca: Lara Majč, Tilen Hebar

Mentorici: Nina Žnidarič, Marjetka Majcen

Šola: Osnovna šola Velika Nedelja

Recenzentka: Barbara Rižnar

Povzetek:

V raziskovalni nalogi s področja etnologije smo raziskali prisotnost obhodnih pustnih mask v Podgorcih in njihovi okolici v sredini 20. stoletja. Za ta časovni okvir smo se odločili zaradi verodostojnosti informacij, ki smo jih lahko pridobili na terenu od informatorjev. Zanimanje nam je zbudilo besedilo Frana Rakuše z naslovom Domoznanstvo ormoškega okraja iz leta 1886, kjer v poglavju šege in navade na ormoškem območju avtor našteje tudi pustne like iz takratnega obdobja. Omenjeno besedilo nam je bilo v pomoč pri oblikovanju hipotez, ki smo jih s pomočjo analize nestrukturiranih intervjujev izbranih posameznikov iz raziskovalnega območja ovrgli ali potrdili. Ugotovili smo, da se je sredi 20. stoletja na območju Podgorcev pustovalo zadnje tri dni v pustnem času. Pustne maske, ki so se pojavljale so bile: kuranti, orači, piceki, mrsa, medved, gambela, baba deda nosi, vlekli pa so tudi kopajo. Ugotovili smo tudi, da so pustne maske na svojem obhodu v dar dobile krofe, jajca, meso in klobase.

Summary:

In the research work in the field of ethnology, we investigated the presence of ethnological masks in village Podgorci and its surroundings in the middle of the 20. century. The time frame was chosen because of the credibility of the information that can be acquired on the terrain. The task was based on the text of Fran Rakuša entitled Domoznanstvo ormoškega okraja from the year 1886, where in the chapter the customs and habits of the Ormož area he also lists the carnival masks. Text mentioned was used to help us design hypotheses, analyzed with the help of unstructured interviews of selected individuals from the research area that were disproved or confirmed. We found that in the middle of the 20. century in the area of Podgorci carnival lasted three days in carnival time. Carnival masks, that appeared were: kuranti, orači, mrsa, bear, gambela, baba carries man, they were also dragging a trough. We also found out that carnival masks were treated with doughnuts, eggs, meat and sausages by the people from the houses they visited.

Semena preživetja »BUOB«



Raziskovalke: Manja Ekart, Tjaša Šterbal, Lana Vajda

Mentorici: Marija Meklav, Silva Hajšek

Šola: Osnovna šola Hajdina

Recenzentka: Barbara Rižnar

Povzetek:

V inovacijskem predlogu smo s pomočjo ankete in intervjuja raziskali našo idejo okrompirjevem sejmu na tržnici v Hajdini, ki bi prispevala k še večji prepoznavnosti kraja in ohranjanju domače obrti. Izvedeli smo veliko o delovanju društev, predvsem pa o njihovem naporu in skrbi za ohranjanje tradicij. Rezultati ankete in intervjujev so pokazali veliko naklonjenost in podporo naši ideji. V preteklosti so bile vasi na Dravskem polju, kamor spada tudi današnje območje občine Hajdine, največji pridelovalec krompirja v Sloveniji. Ljudje so ga kot poljščino sprejeli in spoznali dokaj pozno. Pridelava krompirja je pustila hajdinskim krajem poseben pečat, hkrati pa je "buob", kot mu pravijo domačini, spretno vseskozi povezoval in tudi ohranjal kmečka in obrtniška dela. Cilj naše ideje je prikazati, kako je krompir spremenil jedilnike v naši občini, predvsem pa, kako je bilo s trženjem te dobrine kot glavne sestavine prehrane nekoč in danes. Semena preživetja so tako ustvarjala kulturno krajino posameznega območja in s tem pripomogla k pomenu in zgodovinskim dejstvom naše občine kot tudi širše.

Summary:

In the innovation proposal the idea of a potato fair in Hajdina was explored by means of questionnaires and interviews. The idea would contribute to even greater popularity of the site and the preservation of local crafts. We learned a lot about the functioning of societies, especially of their effort and concern for the preservation of traditions. The results of the survey and interviews showed a lot of affection and support for our idea. In the past, the villages on the Drava field, which includes the present territory of the Hajdina municipality, used to be the largest producers of potatoes in Slovenia. People accepted it as a crop quite late. Potato left the Hajdina places a special touch, while "buob" as the locals call it, skillfully connected and also maintained farmers' and craft work all the time. The aim of our idea is to show how the potato changed the menus in our municipality, particularly, what the marketing of such goods as the main ingredient of diets was like in the past and what it is like today. Seeds of survival were thus creating a cultural landscape of a particular area and thereby contributing to the sense and historical fact of our municipality as well as broader.

Partizanska bolnišnica Jesen



Raziskovalca: Tibor Vito Šušnjara, Lovro Tušek

Mentorica: Katja Leva

Šola: 2. osnovna šola Slovenska Bistrica

Recenzentka: Bojana Murko

Povzetek:

Za raziskovalno nalogo z naslovom Partizanska bolnišnica Jesen sva se odločila zato, ker naju zanima zgodovina, predvsem pa kulturna dediščina kraja, od koder prihajava, Slovenske Bistrice in njene okolice. Želiva, da s pomočjo raziskovalne naloge tudi najini vrstniki spoznajo pomen in zgodovino partizanske bolnišnice Jesen. Nalogo sva napisala s pomočjo informatorke, ki je živela v času 2. svetovne vojne in poznala nastanek bolnišnice Jesen. Na začetku raziskovanja sva postavila tri hipoteze.

Hipoteza 1: Predpostavljava, da učenci naše šole partizanske bolnišnice Jesen in drugih pomembnih dogodkov iz časa 2. svetovne vojne ne poznajo dobro.

Hipoteza 2: Predvidevava, da se bodo odgovori intervjuvane gospe vsaj delno razlikovali od podatkov, ki sva jih dobila iz drugih virov (splet, literatura).

Hipoteza 3: Domnevava, da bodo najini vrstniki ob prebiranju najine raziskovalne naloge o partizanski bolnišnici Jesen, njenem delovanju, pomenu in ostalih dejavnostih izvedeli veliko novega. V teoretičnem delu sva najprej predstavila oris dogodkov 2. svetovne vojne. Nato sva predstavila, kaj so partizanske bolnišnice, kako je bila zgrajena bolnišnica Jesen in kako je delovala. Na koncu teoretičnega dela sva opisala v kakšnem stanju je bolnišnica danes.

V drugem, raziskovalnem, delu sva s pomočjo intervjuja in anketnega vprašalnika skušala potrditi ali ovreči zgoraj omenjene hipoteze. Intervjuvala sva gospo, ki je živela v času gradnje bolnišnice in pozna razmere tistega časa. Anketni vprašalnik so reševali učenci tretje triade naše šole. S pomočjo različnih metod dela sva ugotovila, da učenci res niso dovolj informirani o bolnišnici in da ne prihaja do razlik med prebranimi viri od informacij intervjuvanke. Spodbudila sva tudi zanimanje za bolnišnico že po najini anketi.

Summary:

We decided to work on this assignment about the Partisan hospital Jesen due to our interest both in history and our region's cultural heritage. With this assignment we wish to inform our peers about the historical importance of the Partisan hospital Jesen. We focused primarily on

researching a »live witness«, who lived during the second world war and knew about the hospital. Prior to the research, we have put up the following hypotheses:

Hypothesis 1: We presume that most of our peers in the region do not know of the hospital nor about other world war 2 events, important for our country.

Hypothesis 2: The answers we receive from the interview with a person who lived during the period will probably be at least slightly different from the information we found in other sources (literature, the internet).

Hypothesis 3: After reading our research assignment, the pupils at our school will be more educated about the Partisan hospital Jesen, its importance, activity and history. In the theoretical section, we presented the most relevant events of the second world war, what partisan hospitals are, how Partisan hospital Jesen was built and how it operated.

We finished it by writing about its current state. In the second, practical, section we attempted to confirm or deny our hypotheses, with the help of an interview and a survey. We interviewed a woman who lived during the time of the hospital's construction and operation. The survey we carried out involved the 9th and 7th classes of our elementary school. Through using different methods we have come to the following conclusions: our pupils are not well informed about the hospital, the literature we used has no major differences to the claims by the witness we interviewed, and that we have managed to spike interest in some of the people who participated in our survey.

Kako lepo diši



Raziskovalke: Lana Kozjak, Teja Medved, Sonja Topolovec

Mentorice: Jana Jerenec, Valerija Krivec, Sonja Lenarčič

Šola: Osnovna šola Kidričevo

Recenzentka: Bojana Murko

Povzetek:

Slaščice in peciva so sestavni del našega jedilnika. Predvsem po nedeljskem kosilu se prileže babičino ali mamino slastno pecivo. Ljudje se za občutek sreče radi sladkamo. Večkrat slišimo: Sladkaj se s svojimi najdražjimi. Vse že diši po prazničnih piškotih. Naj bo sladek vsak dan ... Pa je sladkanje zdravo?

V letošnji raziskovalni nalogi smo se učenke lotile raziskave peke peciva nekoč in danes. Peka peciva nekoč je predstavljala pravi družinski obred; recimo peka potice ali kolača, ki se nista pekla vsak dan, temveč le ob posebnih družinskih dogodkih ali praznikih. Peciva smo poskušale tudi tematsko opredeliti.

S pomočjo ankete babic in mamic smo pridobile veliko bogatih informacij glede sestavin in postopkov peke peciva ter dragocenih receptov. Ob naravoslovnem dnevu v decembru 2016 smo s pomočjo kuhinjskega osebja in učiteljic pekli tradicionalno in sodobno pecivo. Zanimala nas je tudi vsebina obeh vrst peciva, torej sladkor, škrob in maščobe. Po peki smo s pomočjo učencev šole – preizkuševalcev izvedle anketo in prišle do naslednje ugotovitve: sodobna peka peciva je bolj zdrava kot tradicionalna, čeprav je le-ta marsikdaj boljšega okusa.

Summary:

Confectionery and cakes are a compound part of our menu. Grandma's or Mum's delicious cake does perfectly suit, particularly after the Sunday's lunch. People like eating sweets for a feeling of happiness. In the Slovene language it is often said: Eat sweets with your loved-ones. Everything smells like holiday cookies. Every day should be sweet. ... But is eating sweets healthy?

In this year's paper the baking was researched, how it used to be and how it is nowadays. Baking used to demonstrate a real family tradition, let us say the baking of the Slovene potica or other cakes, that are not used to be baked every day, but only for special family events or holidays. The cakes were also tried to be classified topically.

A lot of rich information according to the ingredients and procedure of baking cakes as well as precious recipes were got through the survey solved by grandmas and mums.

D

SKUPINA

- BIOLOGIJA •
- APLIKATIVNI INOVACIJSKI PREDLOGI IN PROJEKTI •
- DRUGA PODROČJA •
- INTERDISCIPLINARNA PODROČJA •
- VARNOST V CESTNEM PROMETU •

ŠOLA	NASLOV NALOGE
OŠ Pohorskega odreda Slovenska Bistrica	ORIGANO IN PICA KOT »RIT IN SRAJCA«
OŠ Olge Meglič	VPLIV GLASBE NA UČENJE IN MOZARTOV UČINEK
OŠ Središče ob Dravi	JEČMEN NI SAMO ZA V RIČET
OŠ Markovci	MOBI – MOJ HOBI
OŠ Antona Ingoliča Sp. Polskava, podr. Pragersko	PRVI POLJUB S PRAGERSKEGA
OŠ Kidričevo	VRTIČKARSTVO V KIDRIČEVEM
OŠ Gustava Šiliha Laporje	VPLIV VOZNIKOV NA VARNOST V ŠOLO
Gimnazija Ormož	VINOGRADNIŠTVO V ORMOŽU IN OKOLICI
Gimnazija Ormož	USTREZNOST ŠOLSkih MIZ IN STOLOV GLEDE NA ANTROPOMETRIČNE ZNAČILNOSTI DIJAKOV GIMNAZIJE ORMOŽ

SKUPINA

D

Origano in pica kot »rit in srajca«



Raziskovalec: Luka Tropan

Mentorica: Asja Kamenšek

Šola: Osnovna šola Pohorskega odreda Slovenska Bistrica

Recenzentka: dr. Aleksandra Pivec

Povzetek:

V raziskovalni nalogi sem se osredotočil na zelišča, ki jih najpogosteje uporabljamo doma in so hkrati najbolj značilna za območje, kjer živim. To so bazilika, timijan, meta, žajbelj, peteršilj, kumina, origano in drobnjak. Zanimalo me je, koliko so poznana mojim vrstnikom, ali so jim okusna in s katerimi bi lahko nadomestili značilen okus origana na pici. V literaturi sem poiskal njihove značilnosti in jih doma vzgojil iz semena. Ko so bila dovolj velika, sem jih porezal, posušil in nadrobil. Spekel sem več navadnih pic, jih enakomerno obložil s pelati, sirom in šunko ter na vsako dal eno jedilno žlico posameznega zelišča. Pice sem ponudil svojim vrstnikom, da so ocenili okus in skušali ugotoviti, katero zelišče je na posamezni pici; svoje ugotovitve so beležili v anketni vprašalnik. Preveril sem tudi, kako so sošolcem poznani vonji naštetih zelišč, tako da sem jih zapakiral v zeliščne blazinice. Predvideval sem, da je okus origana na pici dobro poznan vsem in da jim okus pice z drugimi zelišči ne bo preveč všeč. Pripravil sem projekcijsko sliko posode za shranjevanje zelišč in jo izdelal iz lesa.

Summary:

In the research paper I focus on the herbs that are commonly used at home and are the most typical of the area where I live. These are basil, thyme, mint, sage, parsley, cumin, oregano and chives. I was wondering how much are these same herbs known to my peers, whether they are tasty and which could replace the familiar taste of oregano on pizza. In the literature, I have found the characteristics of each herb, and I raised them from the seeds at home. When they were big enough, I cut, dried and crumbled them. I baked more ordinary pizzas and I evenly coated them with a tomato sauce, cheese and ham, and on each I put one tablespoon of each herb. I offered pizzas to my peers, who have evaluated the taste and tried to find out which herb is on an individual pizza and they recorded their findings in a questionnaire. I also checked how familiar is a scent of a single herb to my classmates, so that I packed herbs in herbal pads. I assumed that the well-known flavor of oregano on a pizza will be well known to all people and that they would not like the taste of a pizza with other herbs. I have prepared a projection image of the container for storing herbs and I made it of wood.

Vpliv glasbe na učenje in Mozartov učinek



Raziskovalka: Sara Rosalia Gutschi

Mentorici: Marija Feguš Friedl, mag. Renata Debeljak

Šola: Osnovna šola Olge Meglič Ptuj

Recenzent: Štefan Petek

Povzetek:

Mozartov učinek je v svetu poznan kot raziskava vpliva Mozartove glasbe na naše možgane. Znanstveniki trdijo, da je Mozartova glasba sklop izredno dovršenih simetričnih nevronskih vzorcev, ki so pomembni za določene dele naših možganov. Dokazano je, da se ob poslušanju njegovih del aktivirajo posamezni centri in nevronske mreže v možganih, kar izboljšuje njihovo delovanje. Znanstveniki so na različnih koncih sveta raziskovali Mozartov učinek v različnih okoliščinah, pri nas pa se je s tem ukvarjala psihologinja dr. Katarina Habe, ki definira, da je Mozartov učinek neurofiziološki fenomen, ki se pokaže v obliki izboljšanja nalog prostorsko-časovnega tipa po poslušanju Mozartove sonate za dva klavirja v D-duru K. 448. Raziskovalno sta "idejna starša" tega koncepta Rauscherjeva in Shaw (1993), populariziral pa ga je Don Campbell s svojo knjigo "The Mozart effect" in z izdajo številnih zgoščenk z Mozartovo glasbo za različne namene (npr. za spodbujanje inteligentnosti, za boljši spomin, za večjo ustvarjalnost, ipd.). Don Campbell je pod Mozartovim učinkom opredeljeval pozitivne učinke celotnega opusa Mozartove glasbe. Ker pa je znano, da klasična glasba povečuje zbranost in storilnost in ima pozitivne učinke pri učenju, sem z anketnim vprašalnikom raziskovala, koliko so s tem seznanjeni starši naših učencev od prvega do petega razreda, saj so le-ti prvi, ki z izborom glasbe vplivajo na izbor poslušanja glasbe svojih otrok. Ugotovila sem, da starši z pozitivnimi učinki klasične glasbe pri učenju v večini niso seznanjeni in takšne glasbe svojim otrokom pred in pri učenju tudi ne predvajajo.

Zanimalo me je tudi, kakšne so navade poslušanja glasbe pri učencih od šestega do devetega razreda v moji osnovni šoli ter koliko so seznanjeni s pozitivnimi učinki, ki jih ima klasična glasba na učenje in če vedo, kaj je Mozartov učinek. Z anketo sem ugotovila, da učenci raje poslušajo zabavno glasbo (87 %) kot klasično (13 %). Z Mozartovim učinkom je seznanjen le majhen delež učencev (39 %), medtem, ko ga večina (71 %) ne pozna. Da ima glasba pozitivne učinke na učenje pa se zaveda le 25 % učencev.

Summary:

The Mozart effect is known all over the world as a research of the influence of Mozart's music on our brain. The scientists claim that Mozart's music is a complex of extremely perfective symmetrical neuron patterns which are important for particular parts of our brain. It is generally proved that particular centres and neuron nets in the brain are activated by listening to Mozart's music and that these activities improve the working of the brain. The scientists all over the world have researched the Mozart effect under different circumstances. Katarina Habe, Ph.D., the Slovenian psychologist, is the person who defines the Mozart effect as a neuropsychological phenomena, that can be seen as improvement in doing specific tasks after listening "Sonata for two Pianos in D major K 488 "by Mozart. The ideological parents of this concept are Rauscher and Shaw (1993). Don Campbell, as the author of the book "The Mozart effect", is the person who made this approach quite popular. He is also the person who is in charge of releasing a number of CDs of Mozart's music for different purposes like for encouragement of intelligence, for better memory, for greater creativity...Don Campbell defined, by the help of the Mozart effect, the positive effects of Mozart's music. In the empirical part of my research paper an interview with Katarina Habe, Ph.D., is first presented. Since I am aware of the general knowledge that classical music increases concentration, efficiency and it has positive influences on studying, I was researching, how well parents of our students from first to fifth grade are acquainted with this general fact, by using a questionnaire. I concentrated on parents since they are very important in the process of children's listening to music and they are the ones who play music for their children when they are little. I have found out that parents are mostly not acquainted with positive effects of classical music and that's why they do not play that kind of music to children while they are studying.

I was also interested in students' habits of listening to music, especially students from sixth to ninth grade. I was wondering whether they are acquainted with positive effects of classical music on studying and if they know the Mozart effect. By means of questionnaire I have realized that students rather listen to popular music (87 %) than classical (13 %). The minority of students are familiar with the Mozart effect (39 %), while most of the students do not know this effect (71 %). Only 25 % of students are aware of music's positive effects on studying.

Ječmen ni samo za v ričet



Raziskovalca: Franka Škorjanec, Alen Roškar

Mentorica: Mateja Lašič

Šola: Osnovna šola Središče ob Dravi

Recenzent: Stane Levart

Povzetek:

Raziskovalne naloge sva se lotila z namenom preučiti pridelavo in uporabo ječmena v našem okolju ter raziskati možnosti, kako izboljšati cenjenost in uporabo ječmena. V našem domačem kraju že 7 let deluje manjša zasebna pivovarna, katere vodja je gospod Matej Skoliber. Kot kmetovalec in mlad diplomant se je uprl nizkim odkupnim cenam ječmena tako, da se je odločil, da le-to kulturno rastlino uporabi za proizvodnjo piva. Njegova ideja je obrodila sadove, hkrati pa odpira številne možnosti za nadaljnjo izkoriščanje odpadnih produktov.

Na začetku raziskovalne naloge sva postavila hipotezi, da je ječmen premalo cenjeno in izkoriščeno žito ter da je proizvodnja ječmena za proizvodnjo piva bolj ekonomična kot prodaja le-tega za krmljenje živine. Po temeljitem pregledu strokovne literature in oblikovanju teoretičnega dela sva se lotila raziskave. Hipotezi sva dokazovala s pomočjo anketnih vprašalnikov za okoliške kmetovalce in s pomočjo intervjuja z lokalnim proizvajalcem piva. Vse podatke sva analizirala tako, da sva pregledala vse odgovore, jih statistično obdelala in primerjala med seboj. Ugotovila sva, da je ječmen (tako po mnenju kmetovalcev kot lokalnega proizvajalca piva) premalo cenjeno žito. Skozi raziskovalno delo sva potrdila tudi svojo drugo hipotezo s tem, ko sva ugotovila, da bi bili kmetje in g. Skoliber pripravljene sodelovati v nadaljnji, obsežnejši proizvodnji piva iz ječmena, saj bi bilo to za njih bolj ekonomično. Ječmen ostaja in mora ostati krmno žito, želja pri kmetovalcih pa je iz prodaje le-tega pridobiti čim več. Obstaja želja kmetovalcev po drugih možnostih izkoriščanja ječmena, a na drugi strani obstaja tudi strah pred tem. Ta izhaja iz velikih finančnih stroškov, ki so potrebni za postavitve lastne pivovarne in povezovanja okoliških kmetov v tako imenovane pivovarske obrate. Želja in hkratni strah kmetovalcev pa sta odlična iztočnica za nadaljnje raziskovalno delo.

Summary:

The purpose of our research paper was to investigate the production and use of barley in our surroundings and explore possibilities to improve the appreciation and use of barley. In our hometown small private brewery, whose leader is Mr. Matej Skoliber operates for 7 years. As a farmer and a young graduate who rebelled against the low purchase price of barley in such way that he has decided to use the crop plant for the production of beer. His idea was good, but opened up numerous possibilities for further exploitation of waste products.

At the beginning of the research work we have put up a hypothesis that the barley is insufficiently appreciated and utilized grain, and that the production of barley for beer production is more economical than sale for feeding livestock. After a thorough review of the scientific literature and formulating the theoretical part, we started the research. We wanted to prove our hypothesis with the help of questionnaires for the surrounding farmers and through interviews with local beer producers. We analyzed all the data so that we reviewed all responses and statistically analyzed and compared them with each other. We found out that the barley is according to the opinions of farmers and local beer producers, underappreciated grain. Through research, we also confirmed our second hypothesis, when we found out that the farmers and Mr. Skoliber would be willing to participate in further, more extensive production of beer from barley, as it would be more economical. Barley remains and must remain, feeding grain, but the farmers desire is to gain as much as they can from the sale. There is a desire of farmers for alternatives exploitation of barley, but also a fear on the other side. This fear comes from the large financial costs, which are necessary for building of the brewery and the integration of the surrounding farmers in the so-called malting plants. The desire and the fear of farmers at the same time, is an excellent starting point for further research.

Mobi - moj hobi



Raziskovalke: Eva Kokot, Lucija Janžekovič, Maša Žnidarič

Mentorica: mag. Aleksandra Čeh

Šola: Osnovna šola Markovci

Recenzentka: dr. Dragica Pešaković

Povzetek:

Življenje brez mobilnih telefonov si dandanes več ne moremo predstavljati, saj je njihova uporaba postala nekaj običajnega. Uporaba le-teh je čedalje večja, saj mobilni aparati niso zgolj telefoni, ampak je z njim mogoče početi tudi mnogo drugih stvari; otroci veliko uporabljajo splet, pošiljajo SMS-e, gledajo filme, igrajo igrice, poslušajo glasbo, uporabljajo fotoaparati, snemajo, ...

Za raziskovalno nalogo smo se odločile, da vidimo, koliko otrok na naši šoli ima v lasti svoj mobilni telefon, kako pogosto in koliko časa ga uporabljajo ter katere aplikacije so najbolj priljubljene. Zanima nas, ali mladi preživijo več časa na telefonih ali jih zanimajo tudi ostale oblike druženja (igra na prostem, kolesarjenje, ostale športne aktivnosti). S to raziskovalno nalogo bi rade opozorile mlade, da je prekomerna uporaba kot droga, da slabo vpliva na nas: zmanjšuje medosebno komunikacijo, znižuje nivo besednega sporazumevanja, slabša učni uspeh, izpostavljeni smo sevanju.

Mobilni telefoni predstavljajo na nek način nujno zlo, po drugi strani pa so imenitna priložnost oz. potreba, da postanemo digitalno kompetentni. Moramo iti s časom v korak, pri tem pa biti pazljivi, da si ne škodujemo. Še vedno je lepo poklepetati s prijatelji v živo, se ga dotakniti in se skupaj smejati.

Summary:

Nowadays, it is impossible to imagine living without mobile phones. Mobile phones have become an integral part of our lives. The use of mobile phones has increased, as they are not used only as phones, but they can also be used for a lot of other things. Children frequently use the Internet, send text messages, watch films, play games, and listen to music. They also use their phones as cameras – for taking photos and recording...

In our research project we were interested in things and activities connected with the use of mobile phones. We wanted to find out how many children have their own mobile phone, how often and how long they usually use it, and what applications are most popular among them. We were interested in the amount of time children spend on their mobile phones – whether they spend more time on their phones or socializing with their peers (playing outside, cycling, and other sports activities). With the research project we would like to warn the youth that the effect of excessive use of mobile phones is the same to the one caused by drugs. It has a bad effect on us – reduces interpersonal communication, reduces the level of verbal communication, affects learning ability, users are exposed to radiation.

From one point of view, mobile phones are necessary evil, but from the other they are an excellent opportunity for us to become digitally competent. It is a necessity to use them and they are useful, but we need to be careful not to spend too much time on them. It is still a great experience to talk with friends in person, to touch them and to have a good laugh together.

Prvi poljub s Pragerskega



Raziskovalka: Lina Jenšac

Mentorici: Bojana Marin, Neva Klaneček

Šola: Osnovna šola Antona Ingoliča Spodnja Polskava, podružnica Pragersko

Recenzentka: dr. Dragica Pešaković

Povzetek:

V raziskovalni nalogi sem želela podrobneje raziskati področje poljubljanja. Prišla sem do spoznanja, da se večina mojih vrstnikov s prvim poljubom obremenjuje in menijo, da o tem ne vedo dovolj. Razmišljajo o pravem času za prvi poljub, skrbi jih, kako, kje in s kom se bo zgodil. Največjo oviro jim predstavlja izbira načina poljubljanja. Osredotočila sem se tudi na občutke in čustva, ki so jih doživljali pred in po prvem poljubu. V teoretičnem delu naloge sem predstavila nekaj splošnih dejstev o poljubu in poljubljanju, zgodovino poljuba, prvi poljub, poljubljanje v vsakdanjem življenju, vrste poljubov ter se dotaknila psihologije poljuba pri mladostnikih. V raziskovalnem delu sem s pomočjo anketnega vprašalnika želela izvedeti čim več o prvem poljubu posameznika. Za merjenje telesne samopodobe sem uporabila lestvico telesne samopodobe iz Vprašalnika samopodobe – SPA. Podatke, ki sem jih pridobila, sem obdelala ter jih ustrezno predstavila z grafi in tabelami. Za podrobnejše podatke o kraju, času in načinu poljubljanja ter o prvem poljubu različnih generacij na Pragerskem sem uporabila metodo polstrukturiranega intervjuja z informatorji.

Summary:

In my research paper, I wanted to explore in detail the area of kissing. I came to a conclusion that most of my peers are burdened with their first kissing and are considered that they do not know enough about it. They think about a right time for it, worry about how, where and with whom it will happen. The choice of a way of kissing represents their biggest obstacle. I also focused on feelings and emotions that they experience before and after kissing. In the theoretical part of my research paper I presented some general facts about kissing, the history of it, the first kiss, the kissing in everyday life, types of kissing and I researched the psychology of youth kissing. In the research part I used a questionnaire to find out as much as I could about the first individual's kissing. I used the scale of body self-image from the Questionnaire of Self-Image (SPA) for the measurement. I processed and appropriately presented the data in graphs and charts. For more detailed information about the place, time and manner of kissing of different generations in Pragersko I used the method of semistructured interviews with informants.

Vrtičkarstvo v Kidričevem



Raziskovalci: Sara Planinšek, Miha Muršec, Tanaja Čeh

Mentorici: Marjeta Sušec, Ankica Pikula

Šola: Osnovna šola Kidričevo

Recenzentka: dr. Aleksandra Pivec

Povzetek:

V zadnjem času se vse več pozornosti posveča zdravi prehrani, zdravim živilom, lokalno pridelani hrani. V povezavi s pridelovanjem hrane se poudarja skrb za odgovoren odnos do narave in varstvo okolja. Ljudje so vse bolj ozaveščeni v skrbi za lastno zdravje, kritično presojujejo ponudbo živil v trgovskih centrih ter se usmerjajo v nakup lokalno pridelane hrane in posegajo po sezonskih pridelkih.

Vse bolj se izraža nezaupanje do velikih korporacij, ki počasi prevzemajo nadzor nad prehranjevanjem svetovnega prebivalstva. Povečuje se povpraševanje po eko živilih; živilih, pridelanih brez zdravju škodljivih škropiv in umetnih gnojil. Razne vrtičkarske oddaje v medijih spodbujajo ljudi k obdelovanju lastnih vrtičkov ali gojenju zelenjave v posodah na balkonih v naseljih in mestih. V nekaterih slovenskih občinah imajo z vrtičkarji sklenjene najemne pogodbe o uporabi zemljišča. Nekaj primerov urejenega vrtičkarstva smo zajeli tudi v teoretičnem delu naloge. Vrtičkarstvo pridobiva na pomenu in v naši raziskovalni nalogi smo se zato odločili podrobneje raziskati to dejavnost v kraju, kjer živimo, v Kidričevem. V nalogi smo se lotili raziskovanja začetkov vrtičkarstva v občini Kidričevo, a smo v arhivskem gradivu našli zelo malo zapisov. V nalogi smo z anketnim vprašalnikom med občani želeli izvedeti, kako je vrtičkarstvo v občini urejeno danes, kakšna je starostna struktura vrtičkarjev, zakaj se ljudje odločajo za obdelovanje vrta, kako obdelujejo vrtove z okoljevarstvenega vidika in česa si želijo v prihodnosti. Sklepna ugotovitev naše naloge je, da v zadnjem času v Kidričevem ponovno postopoma narašča zanimanje za obdelovanje vrtov, v obdelovanje zemlje se vključujejo celotne družine, znanje se prenaša na mlajše rodove. Na občini iščejo načine za zagotavljanje zemljišč z namenom ohranjanja vrtičkov, ki v našem naselju obstajajo že več kot 60 let.

Summary:

Recently, more focus is put on healthy nourishment, healthy food as well as local-grown food. There is also a great stress on the concern for a responsible attitude laid towards the nature and protection of the environment in

connection with food-growing. People are more aware of their own health, they critically judge the food offer in the malls and are directed to buy local-grown food and take season's harvest.

Distrust against the great corporations is increasingly expressed, that slowly overtake the control of the nourishment of the world's population. The demand of eco-nourishment; nourishment grown without damaging sprays and artificial fertilizers is growing. Different garden shows in the media are stimulating people to gardening of their own gardens or growing of vegetables in pots on balconies in settlements or towns. Hiring contracts are made with gardeners about the land use in some Slovene counties. A few examples of a tidy gardening were put into the theoretical part of the paper. The importance of gardening is growing and therefore we decided to explore this activity in Kidričevo, our settlement we live in. Our main concern was put on the beginning of gardening in the municipality of Kidričevo but in the archival material there were found just a few entries. Vrtičkarstvo v Kidričevem. By means of a questionnaire we wanted to learn from the citizens, how the gardening is organized nowadays, how old the gardeners are themselves, why people decide to cultivate gardens, in which way they cultivate the gardens in aspect of the environment and what they wish for the future. The final conclusion of the paper is, that the interest of gardening in Kidričevo is recently gradually raising again. Whole families are included in the cultivation and the knowledge is endorsed on younger generations. The municipality looks for ways of assuring the grounds to preserve the gardens that have existed in our settlement over 60 years.

Vpliv voznikov na varno pot v šolo



Raziskovalec: Miha Sterkuš

Mentor: Jure Cvahte

Šola: Osnovna šola Gustava Šiliha Laporje

Recenzent: Boštjan Koletnik

Povzetek:

Ker pešci spadajo med ranljivejše udeležence v prometu, je njihova varnost zelo pomembna. Pot nekaterih učencev v šolo OŠ Gustava Šiliha Laporje je pogosto nevarna zaradi prečkanja regionalne ceste, ki povezuje kraja Slovenska Bistrica in Poljčane, čez prehod za pešce v kraju Križni Vrh. V raziskovalni nalogi sem ugotavljal ozaveščenost voznikov pred omenjenim prehodom za pešce. Meril sem hitrosti vozil in opazoval uporabo mobilitelov (držanje telefona v rokah) pri voznikih med vožnjo. Hitrost vozil sem določil tako, da sem s pomočjo kamere in računalniškega programa Windows Movie maker natančno določil čas, ki ga je potrebovalo vozilo, da je prevozilo določeno razdaljo med dvema obcestnima količkoma, ki sem jo izmeril z metrom. Povprečno hitrost vozila sem dobil tako, da sem razdaljo delil s časom. Uporabo mobilnega telefona (držanje telefona v rokah) pri voznikih sem opazoval z avtobusne postaje ob prehodu za pešce. Negativno me je presenetilo, da se je samo dvanajst od stotih voznikov (12 %) držalo hitrostne omejitve, ki je na tem odseku 50 km/h. Zaradi napak pri merjenju sem mejno hitrost povišal na 53 km/h. Sam sem predvideval, da se omejitve ne bo držala približno polovica voznikov. Pozitivno pa me je presenetila uporaba mobilnih telefonov med vožnjo pri voznikih, saj je od 200 samo 16 voznikov (8%) imelo v rokah telefon, sam pa sem pričakoval, da jih bo vsaj četrtnina kršila ta prometni predpis.

Summary:

Pedestrians are among the more vulnerable traffic participants and that is why their safety is very important. The school route of some students of the Gustav Šilih primary school in Laporje is often dangerous, because they have to cross a regional road connecting the towns of Slovenska Bistrica and Poljčane, at a pedestrian crossing in the town of Križni Vrh. In my research assignment, I tried to determine the awareness of drivers approaching the mentioned pedestrian crossing. I measured vehicle speed and monitored drivers' use of mobile phones (hand-held) while driving. Vehicle speed was determined by using a video camera and a computer programme Windows Movie Maker, which allowed me to determine the exact time it took a vehicle to pass two predetermined roadside posts, the distance between which I measured beforehand using a meter. I calculated the average vehicle speed by dividing distance by time. Drivers' use of mobile phones (hand-held) was monitored from a bus station next to the pedestrian crossing. I was surprised and disappointed that only twelve drivers out of 100 (12%) respected the speed limit, which at this section is 50km/h. In my calculations, the speed limit was increased to 53km/h to compensate for the measurement errors. I had expected that approximately half of the drivers would not respect the speed limit. However, I was pleased to discover that only 16 drivers out of 200 (8%) used a hand-held mobile phone, because I had expected that at least a quarter of them would violate this traffic rule.

Vinogradništvo v Ormožu in okolici



Raziskovalki: Klara Branda, Ana Zemljč

Mentorica: Karmen Plavec

Šola: Gimnazija Ormož

Recenzentka: dr. Aleksandra Pivec

Povzetek:

Vinogradništvu je v Ormožu in okolici zelo razvita gospodarska panoga. Po pokrajini se kar bohotijo številni vinogradi, ki vsako leto rodijo ena najboljših vin sveta. Vinogradniki vse leto trdo delajo, da lahko jeseni poberejo sladko grozdje. Nato se z njim ukvarjajo še v kleti, kjer poskrbijo, da iz sladkega mošta nastane odlično vino. Vinogradništvo je v naših krajih zelo razširjena in pomembna dejavnost. Ponosni bi morali biti na naše vinograde in na bogastvo, ki nam ga vsako jesen izročijo. Sami sva z vinogradi odraščali, saj imava obe v družini vinogradnika. Tako sva se že od majhnih nog učili, kako je treba delati v vinogradu in kasneje v kleti ter vsako jesen pridno pomagali na trgatvah. Pa se mladi sploh zavedajo, kako pomembna panoga je vinogradništvo? Vedo, kaj vse zajema poklic vinogradnika? Gaa vedo spoštovati? Zaradi takih in podobnih vprašanj, ki so se nama začela porajati, sva se odločili za izdelavo te raziskovalne naloge, v kateri sva še dodatno poglobili svoje znanje o vinogradništvu in delu vinogradnika ter raziskali, kakšno znanje imajo o tem najini vrstniki. Rezultati so naju razveselili, saj sva bili mnenja, da bova odkrili problem. Mladi pa so naju presenetili, saj so izkazali veliko mero znanja o vinogradništvu in poklicu vinogradnika, ter nama pokazali, da se zavedajo, koliko dobrega prinaša vinogradništvo Ormožu in okolici.

Tudi sami se želiva v prihodnosti ukvarjati z vinogradništvom. Morda to res ne bo najin edini poklic, a imava obe željo prevzeti domače vinograde in nadaljevati družinsko tradicijo. Veseli naju, da se mladi zavedajo pomembnosti tega in da bo najina odločitev spoštovana ter cenjena.

Summary:

Viticulture is a highly developed industry in Ormož and its surrounding area. All over the province there are numerical vineyards, which annually give birth to one of the best wines in the world. Winegrowers work hard all year long in order to pick sweet grapes in autumn. Their

work continues in the wine cellar where they ensure that their sweet must transforms into an excellent wine. Viticulture is a widespread and important activity in our region. We should be proud of our vineyards and their richness that is handed to us every autumn. We ourselves grew up in vineyards, because we both have a winegrower in our family. So we learnt from an early age how to work in a vineyard and later on in the wine cellar, we also helped during the grape harvests every autumn. Is the youth even aware of the importance of the wine industry? Do they know what encompasses the profession of a winegrower? Do they respect it? Would they want to work in the viticulture? Due to these and other similar questions that have begun emerging in us, we decided to make this research assignment in which we deepened our knowledge of viticulture and of the winegrowers' work. We investigated how much knowledge our peers have about viticulture. We are pleased with the results because we thought that we will discover a problem. Young people surprised us because they have proved a great deal of knowledge about viticulture and winegrowers' profession and showed us that they are aware of how much good viticulture brings to Ormož and its surroundings.

We too, want to work in viticulture in the future. Perhaps it will not be our only profession, but we both desire to take over our family vineyards and continue the family tradition. We are pleased that the youth is aware of the importance of this and that our decision will be respected and appreciated.

Ustreznost šolskih miz in stolov glede na antropometrične značilnosti dijakov Gimnazije Ormož



Raziskovalka: Tina Rizman Herga

Mentorica: Vesna Pintarič

Šola: Gimnazija Ormož

Recenzentka: dr. Dragica Pešaković

Povzetek:

Promocija zdravja v šolah postaja vse bolj pomembna. Zato sta ureditev prostora za delo v šoli in pravilna izbira šolskega pohištva zelo pomembna dejavnika. Namen raziskovalne naloge je bil ugotoviti ustreznost dimenzij šolskega pohištva z antropometričnimi meritvami dijakov. V raziskavo je bilo zajetih 125 dijakov Gimnazije Ormož (N=125). Izmerjene so bile dimenzije šolskega pohištva in antropometrične mere dijakov: telesna višina, poplitealna višina, kavalna dolžina stegna, višina komolca, debelina stegna, višina akromiona in bitrohanterična širina bokov. Izmerjene antropometrične mere dijakov smo primerjali z dimenzijami miz in stolov, ki jih dijaki uporabljajo. Kvalitativni del naloge predstavljata izvedena anketa, s katero smo pridobili mnenja dijakov o ustreznosti šolskega pohištva, ter izveden eksperiment. Čeprav obstajajo standardi za oblikovanje šolskega pohištva, je raziskava pokazala neujemanje le tega z antropometričnimi merami dijakov, kar lahko povzroča zdravstvene težave, je razlog za slabo počutje dijakov in vpliva na potek spremljanja pouka.

Summary:

Promotion of health in schools is becoming more and more important. That is why setting the classroom and the right choice of school furniture are imperative factors. The purpose of the research work was to ascertain how adequate are the dimensions of school furniture with anthropometric measurements of students. 125 students (N=125) of secondary school Ormož were included in the research. The dimensions of school furniture were measured and anthropometric measurements of students were done: body height, popliteal height, buttock popliteal length, elbow height sitting, thigh thickness, shoulder height and hip width. Anthropometric measurements were then compared with dimensions of desks and chairs that are used by students. A survey

represents the qualitative part of the research with which we obtained students' opinions about how well the school furniture matches their needs. of and An experiment was conducted as well. . Despite the fact that there are standards for designing school furniture, the research found out that there is a mismatch between the anthropometric measurements of students and the school furniture. This might cause health problems, influence students' well-being and affect students' performance in class.

SKUPINA

E

- TEHNIKA IN TEHNOLOGIJA •
- EKOLOGIJA Z VARŠTVOM OKOLJA •
- KEMIJA ALI KEMIJSKA TEHNOLOGIJA •
- ASTRONOMIJA ALI FIZIKA •
- MATEMATIKA ALI LOGIKA •
- RAČUNALNIŠTVO
ALI TELEKOMUNIKACIJE •

ŠOLA	NASLOV NALOGE
OŠ Olge Meglič	PRIMERJAVA ELASTOMOBILOV
OŠ Mladika	RIBOLOV V PTUJSKEM JEZERU IN DRAVI
OŠ Gustava Šiliha Laporje	BARVANJE NARAVNIH IN UMETNIH TKANIN Z NARAVNIMI BARVILI
OŠ Ormož	TARTINIJEVI TONI
OŠ Gustava Šiliha Laporje	SPLETNO NAKUPOVANJE
OŠ Anice Černejeve Makole	POVEJ MI GESLO, IN POVEM TI OD KOD SI
Gimnazija Ptuj	SFERIČNA TRIGONOMETRIJA
ŠC Ptuj, Elektro računalniška šola	TESTIRANJE RAČUNALNIŠKE IGRE LABIRINT
	RAČUNALNIŠKA IGRA PO MERI

SKUPINA
E

Primerjava elastomobilov



Raziskovalca: Jure Kekec, Anej Podgorelec

Mentorica: Vida Lačen

Šola: Osnovna šola Olge Meglič Ptuj

Recenzent: dr. Janez Petek

Povzetek:

Hiša eksperimentov v Ljubljani vsako leto organizira tekmovanje elastomobilov. Elastomobili so avtomobili, ki imajo za edini pogon dve elastiki. Lahko se kot pogon uporabi tudi vzmet v kombinaciji z elastiko.

Midva imava zelo rada tehniko in avtomobile. Rada ustvarjava, zato sva se odločila, da narediva kaj več na tehničnem področju. Odločila sva se, da izdelala dva elastomobila, ki sta konstrukcijsko enaka. Oba sta izdelana iz lesa, s pogonom na elastiko v kombinaciji z vzmetjo in z zobniškim prenosom moči. Razlika med njima je le v zobnikih. Prvi ima lesene, ročno izdelane zobnike, drugi pa kovinske zobnike, katere sva kupila.

Pri obeh elastomobilih sva primerjala čas, koliko časa potrebujeta, da prevozita določeno razdaljo. Želela sva namreč izvedeti, katera vrsta zobnikov je ustrežnejša, da je elastomobil hitrejši na svoji poti. Prav tako sva primerjala tudi pot, ki jo posamezni elastomobil opravi. Najin cilj je bil ugotoviti, kakšne zobnike vgraditi, da bo opravljena pot čim daljša. Glede na to, da je elastomobil z lesenimi zobniki lažji, sva želela ugotoviti tudi, ali teža vpliva na hitrost oz. pot. Zaradi tega sva ga dodatno obtežila in opravila iste meritve.

Summary:

The House of Experiments in Ljubljana organizes an 'Elastomobile competition' every year. »Elastomobiles« are rubber band powered toy cars, which are either powered by two rubber bands or by a combination of a spring and a rubber band.

The authors are not only very interested in crafts but also in cars, that is why they decided to construct two identical rubber band powered cars. Both cars are made of wood and powered by a rubber band combined with a spring and they are both equipped with a cogwheel. The only difference between the two is the cogwheel itself. The first cogwheel has handmade wooden cogs, whereas the second one has been bought and it is made of metal entirely.

The authors compared the time that took each of the cars to overcome a certain distance as they wanted to find out which cogwheel provides a better velocity. They also compared the biggest distance that each of the cars was able to overcome. The purpose of this research paper was to ascertain which cogwheel to use in the car so that it would overcome the biggest distance. They also wanted to find out whether the weight of the car influences its velocity or distance, that is why they added weight to the car and carried out the same measurements again.

Ribolov v Ptujskem jezeru in Dravi v okolici Ptuja



Raziskovalec: Filip Teo Vidovič

Mentorica: Majda Kramberger Belšak

Šola: Osnovna šola Mladika

Recenzent: dr. Janez Petek

Povzetek:

V reki Dravi, v okolici Ptuja, je število rib v primerjavi s časom pred izgradnjo akumulacijskega jezera upadlo. Analizirali smo vodo iz dela reke Drave, kjer je voda tekoča in vodo iz mirujočega dela reke v Ptujskem jezeru ter ugotovili, da je voda primerna za življenje rib. Vendar v jezeru ni najboljših pogojev za ribe. Problem predstavljajo asfaltirano nabrežje, previsoko število vodnih ptic in vožnja z vodnimi skuterji, ki povzročajo močno valovanje vode in s tem tresenje vodnih rastlin na katerih so pritrjene ikre. Prehitro in premočno nihanje vodne gladine jezera, ki jo povzročajo z odpiranjem in zapiranjem zapornic na jezcu v Markovcih, ni najboljša za ribe. Ribe v Ptujskem jezeru in v Dravi so uporabne, zato bi bilo smiselno ponuditi ribarjenje turistom kot eno izmed oblik turizma.

Summary:

In the river Drava, in the surrounding of Ptuj, a number of fish has decreased in comparison with the time in the past, before the reservoir was built. We have analysed water from a part of the river Drava, where the water flows and water from a still part of the river in the Ptuj's lake. We have found out that the water is suitable for fish habitat. However, in the lake the conditions are not the best for fish life. Problems for this can be found in asphalt embankments, numerous water birds and in riding by water scooters, which causes intensive water waves and consequently strong vibration of water plants on which roe are attached. Too quick and too strong swinging of the lake's surface, which is caused by opening and closing floodgates at a dam in Markovci, is as well not the best thing for fish life. The fish in the Ptuj's lake and in the river Drava are edible; therefore, it would make sense to offer to tourists also fishing as one of the forms of tourism.

Barvanje naravnih in umetnih tkanin z naravnimi barvili



Raziskovalec: Luka Urban Kitek

Mentorica: Barbara Čretnik

Šola: Osnovna šola Gustava Šiliha Laporje

Recenzent: dr. Janez Petek

Povzetek:

Osnovni namen raziskovalne naloge je bil raziskati in ugotoviti, ali lahko z naravnimi barvili kvalitetno obarvamo naravne in umetne tkanine, in če lahko, katera barvila so učinkovita. Zanimalo me je, ali so lahko naravna barvila obstojna in katere utrjevalce je dobro uporabiti. Preučil sem tudi, ali se naravna barvila bolje raztapljajo v vodi ali v alkoholu. Pri raziskovalni nalogi sem uporabljal tri metode dela. V uvodnem delu sem uporabil metodo dela z viri in literaturo, nato eksperimentalno delo in metodo analize ter sinteze. Iz raziskovalne naloge sem se naučil, da je najboljši utrjevalec, ko barvamo naravne in umetne tkanine z naravnimi barvili, kis. Zelo dober utrjevalec je tudi modra galica, ki da zelo intenzivne odtenke barv in volno ter lan obarva z zelo intenzivnimi barvami. Zelo zanesljiv utrjevalec je tudi sol, ki da konstantne rezultate, le nekoliko svetlejše odtenke barv. Moja druga ugotovitev je bila, da se nekatera naravna barvila raztapljajo v destilirani vodi (polarno topilo), druga barvila pa v nepolarnih topilih. Antocijanini, betanini in flavonoidi so topni v vodi, klorofili zelo slabo in karotenoidi v rastlinskih oljih. Na prve pH topila vpliva, na karotenoide in klorofile pa ne.

Z naravnimi barvili sta se najbolj intenzivno obarvali lanena tkanina in volna, sledita džersi in bombaž. Najslabše naravna barvila obarvajo poliester. Moja zadnja ugotovitev je, da so se za najboljša (najkvalitetnejša – najbolj intenzivna) naravna barvila izkazala barvila iz: maslene buče, borovnic, rdečega zelja, rdečega grozdja, rdeče pese in kave. Moje ugotovitve so lahko uporabne pri barvanju folklornih oblačil, saj so današnje barve prežive in premočne, zato še danes barvajo stara folklorna oblačila z naravnimi barvili. Prav tako lahko barvamo otroška oblačila. Današnje barve lahko povzročajo kožne težave. Večina naravnih barvil pa nima škodljivih učinkov za otroško kožo. Priporočam vam, da z naravnimi barvili barvate naravne tkanine – predvsem lan in volno, pa tudi bombaž. Pri barvanju z naravnimi barvili kot utrjevalec uporabite brezbarven kis.

Summary:

The main objective of my research paper was to discover whether it is possible to dye natural and synthetic fabrics in high quality with natural colours, and what are the most efficient pigments. I wanted to discover whether the natural colours are long-lasting or not. Furthermore I have studied the process of dissolving of natural colours in water and in alcohol. Three research methods were used: the method of qualitative data and literature analysis in introduction, the experimental method and the method of analysis and synthesis. Firstly, I have learnt that vinegar is the most efficient sealer when dyeing natural and synthetic fabrics. A very good sealer is also the copper sulphate, which provides intensive colour shades on wool and linen. Salt is highly reliable sealer, which provides constant results, but somewhat lighter shades of colour. Secondly, I have discovered that some natural dyes dissolve in distil water (polar solvent) and some in nonpolar solvents. Anthocyanins, betaines and flavonoids are dissolved in water and carotenoids are dissolved in plant oils. Anthocyanins are affected by pH., betaines and flavonoids are not.

Natural dyes were the most effective on line fabrics and wool, slightly less effective on jersey and cotton, and the least effective on synthetic fabrics. Thirdly, the most effective natural dyes are: blueberries, red cabbage, red grapes, beet root, coffee and pumpkins. My findings are helpful for those who are dyeing folklore clothes, because modern shades of colours are in this case often too intensive. Natural dyes are still used for dyeing folklore clothes today. Natural dyes can be very useful for dyeing children's clothes to prevent skin irritation. It is advised to use natural dyes with natural fabrics like linen, cotton, wool and to use colourless vinegar as a sealer.

Tartinijevi toni



Raziskovalec: Matic Petek

Mentor: Roman Bobnarič

Šola: Osnovna šola Ormož

Recenzentka: dr. Anamarija L. Mrgole

Povzetek:

V glasbi se uporabljajo glasbila, ki jih je potrebno prilagajati, da z njimi lahko igramo kot solo instrumente, v dvojicah ali v večjih skupinah – treba jih je uglasti. Uglasovanje se lahko izvaja na več načinov – eden od načinov je uglasovanje s pomočjo kombinacijskih tonov, za katere velja, da jih je odkril Giuseppe Tartini leta 1714. V literaturi se velikokrat navaja, da je uporaba teh kombinacijskih tonov zahtevna za uglasovanje. V raziskovalni nalogi je z uporabo fizikalnih meritev razloženo več lastnosti zvoka, ki so temelj za razumevanje teh tonov in njihovo uporabo. Hkrati so razložene metode in poskusi, s katerimi so ti toni tudi izmerjeni. Z uporabo tonov iz kitarskih strun pri različnih frekvencah in merilne tehnike je razloženo, kako in kdaj se ti toni pojavijo. Na primeru pa tudi prikazano, kako jih lahko uporabimo.

Summary:

In music, musical instruments are used, but they have to be adjusted, so solo, two or even more musicians can play together – the instruments must be tuned. Tuning instruments can be achieved in many different ways – one of them is using combination tones for which is said that were discovered by Giuseppe Tartini in 1714. It is often said in literature, that using these tones is very demanding and hard for tuning different instruments. In this paper there are several properties of sound that have been measured and are considered as a base of understanding combination tones and using them for tuning. At the same time methods and experiments for measuring them are also explained. By using different sounds from guitar strings at different frequencies and measuring techniques, it is explained how and when these tones appear. And in certain cases it is shown how we use these tones.

Spletno nakupovanje: PP (profit ali Prevara)



Raziskovalec: Filip Rap

Mentorica: Renata Kovačič

Šola: Osnovna šola Gustava Šiliha Laporje

Recenzentka: dr. Anamarija L. Mrgole

Povzetek:

Za raziskovalno nalogo sem se odločil, ker nam poštar skoraj vsak dan na dom dostavi polno oglasnih revij in letakov. Na podlagi tega sem začel razmišljati, ali res lahko toliko prihranim, če se na čisto običajen dan odpravim v trgovino po nakupih vsakdanjih izdelkov. Tako sem si izbral 15 izdelkov, ki jih v naši družini najpogosteje kupujemo in se odpravil v spletne, klasične in lokalno trgovino.

Namen moje raziskovalne naloge je bil ugotoviti, kje je nakupovanje cenejše, v spletni ali v klasični trgovini. Zanimalo me je tudi, koliko lahko povprečno prihranim pri posameznem izbranem izdelku in koliko pri živilih, beli tehniki ter tekstilu. Prav tako sem se spraševal, koliko lahko prihranim, če živila kupujem v poslovalnicah trgovskih verig v primerjavi z lokalno trgovino.

Skozi raziskovalno nalogo sem ugotovil, da je nakupovanje v spletni trgovini »profit«. Zaradi te ugotovitve sem prvo hipotezo, ki pravi: Pri nakupu živil lahko več prihranim v klasični kot v spletni trgovini. Pri nakupu izdelkov bele tehnike in tekstilnih izdelkov pa lahko več prihranim, če jih kupim v spletni trgovini. Skupno lahko več prihranim v spletni trgovini, delno potrdil. Ko sem raziskoval naprej, sem ugotovil tudi, da lahko na področju živil povprečno prihranim 6 %, na področju bele tehnike 15 % in na področju tekstila kar 27 %. Na podlagi teh ugotovitev sem drugo hipotezo, ki pravi: Na področju živil lahko prihranim 20 %, na področju tekstila 10 % in na področju bele tehnike 30 % ob upoštevanju najugodnejše ponudbe, zavrnil. Na koncu sem se lotil še primerjave cen izdelkov v poslovalnicah trgovskih verig s cenami izdelkov v lokalni trgovini. Ugotovil sem, da je en izdelek v lokalni trgovini cenejši celo za 5 %, povprečno pa lahko z nakupom v poslovalnicah trgovskih verig v primerjavi z lokalno trgovino prihranim 23 %. Tudi teoretični del potrjuje te ugotovitve. Na podlagi tega sem tretjo hipotezo, ki je: Vse cene izbranih živil v lokalni trgovini so v povprečju višje od cen izbranih živil v poslovalnicah trgovskih verig za 10 %, zavrnil.

Ob raziskovanju so se mi porajale tudi ideje za nadaljnja

raziskovanja. Raziskoval bi lahko še, koliko časa potrebujemo, da opravimo nakup v spletni in koliko v klasični trgovini. Raziskal bi lahko tudi, koliko ljudi kupuje na spletu in kako pogosto ter koliko so povprečno stari izdelki, ki jih dobimo v klasični trgovini in koliko v spletni trgovini, oz. koliko časa je do izteka roka uporabnosti.

Summary:

I decided to do this research paper because we get almost every day a pile of commercials and fliers in our mailbox. I started thinking if I really can save that much, if I go shopping for everyday stuff on a regular day. I chose 15 products that our family buys on a regular basis and went shopping online, to a classical and a local store. The aim of my research paper was to investigate where we can buy things the cheapest, online or in a classical store. I was also interested in how much can I save on each chosen product and how much on food, household appliances and clothing. I was also wondering how much I can save if the food is bought in chain stores comparing to local stores. Throughout the research paper I established that online shopping is »profit«. Therefore I partially confirmed my first hypothesis that says: Buying food in a classical store saves more money than buying it online. Buying household appliances and clothing on the other hand saves more money shopping online. Altogether I can save more in an online shop. While doing the research I found out that we can save in average 6% purchasing food, 15 % purchasing household appliances and 27 % purchasing clothing online. According to these findings I disproved the second hypothesis that says: In field of food I can save 20 %, in field of clothing 10% and in field of household appliances 30 % considering the best offers. At the end, I also compared the prices of products in chain stores to prices of products in a local store. I found out that one product in a local store is even 5 % cheaper, in average we can save 23 % shopping in chain stores comparing to shopping in a local store. The theoretical part confirms these findings. According to this, I disproved the third hypothesis that says: All prices of food chosen in a local store are in average higher than prices of food chosen in chain stores by 10 %.

While doing the research, I also gained ideas for further research. I could also investigate how much time we need to do online and classical shopping. I could also investigate how many people buy products online, how often and how old are the products in average purchased in a classical store and online or how much time is left until the date of expiry.

Povej mi geslo in povem ti, kdo si!



Raziskovalki: Eva Jug, Ajda Ritonja

Mentor: dr. Andrej Šafhalter

Šola: Osnovna šola Gustava Anice Černejeve Makole

Recenzent: Daniel Tement

Povzetek:

V teoretičnem delu raziskovalne naloge so predstavljene že znane ugotovitve iz preteklih raziskav. Opisane so razlike med šibkimi in močnimi gesli ter pomembnost izbire, shranjevanja in menjave gesel. Predstavljen je tudi način, kako si postaviti močno geslo in ga primerno zavarovati. V empiričnem delu so podani rezultati raziskave, ki sva jo naredili med učenci od šestega do devetega razreda naše šole. Izdelali sva vprašalnik za najpogosteje uporabljene aplikacije in ugotavljali, katere od teh se jim zdijo bolj oz. manj pomembne ter kako močna gesla uporabljajo. Namen raziskovalne naloge je bil ugotoviti, kako močna gesla uporabljajo učenci glede na starost in spol. Prav tako sva želeli izvedeti, kako pogosto menjujejo gesla, če gesla zaupajo drugim osebam, če jih imajo zapisana na listu in če uporabljajo enaka gesla za več aplikacij. Zanimali so naju tudi vzorci in pogostost uporabe posameznih znakov na tipkovnici ter vzorci zaklepanja telefona.

Summary:

In the theoretical part of the seminar paper the already known findings of previous researches are presented. The differences between weak and strong passwords and the importance of the selection, storage and password changes are described. The way to set a strong password and adequately protect it is also presented. In the empirical part the results of the research we made between sixth to ninth-grade students of our school are presented. A questionnaire for the most commonly used applications was prepared to identify which of the passwords seem more or less important, and to see how strong the passwords students use. The purpose of the paper was to determine how strong passwords are used by the students according to their age and gender. We also wanted to know how often the passwords are replaced, if passwords are trusted to other people, if they are written on paper, and if the same passwords are used for multiple applications. We were also interested in patterns and frequency of each character usage on keyboard and the patterns of phone locks.

Sferična trigonometrija



Raziskovalec: Jaka Bezjak

Mentorica: Simona Kokol

Šola: Gimnazija Ptuj

Recenzentka: dr. Anamarija L. Mrgole

Povzetek:

Na postavljeno vprašanje »Ali obstaja trikotnik, ki ima vse tri kote prave kote?« sem odgovoril tako, da sem preučil vejo matematike, sferično geometrijo, ki spada k neevklidski geometriji. Ugotovil sem, da sferična geometrija ne temelji na enakih aksiomih kot vsem znana običajna evklidska geometrija, zato se od nje precej razlikuje. Svoje aksiome in definicije namreč gradi na krogli – sferi. Ko sem se najprej seznanil z osnovami sfere, sem lahko nadaljeval s spoznavanjem geometrije na njej. Hitro sem spoznal nov lik, sferični dvokot, in na kratko preučil njegove lastnosti in posebnosti. Najbolj me je zanimalo, kaj se dogaja s trikotnikom na sferi. Preučil sem njegove lastnosti in posebnosti ter osnovne povezave med stranicami in koti (kotne funkcije). Tako sem se seznanil s pravokotnim sferičnim trikotnikom. Preučil sem še njegove posebnosti in si tako odgovoril na postavljeno raziskovalno vprašanje. Pozanimal sem se tudi, kje se sferična trigonometrija uporablja danes in sem z novim znanjem rešil nekaj zanimivih primerov uporabe sferične trigonometrije.

Summary:

To answer my research question »Does a triangle with three right angles exist?« I had to dive into the study of a branch of mathematics new to me, called spherical geometry, which falls under non-euclidean geometry. I found out it is not based on the same axioms as regular euclidean geometry and so it differs quite a bit from it. Its axioms are based on a ball – a sphere. After I figured out the basics of a sphere, I could move on to the geometry. I quickly discovered a new geometrical shape, a spherical biangle, and studied its properties and specialities. I was most interested in what is happening to a triangle on a sphere. I studied its properties, specialities and the basic connections between its angles and sides (circular functions). That is how I first met a right spherical triangle. I also studied its properties and by doing so, I answered my research question. Finally I looked into where spherical trigonometry is used today and with my new-found knowledge I solved some examples of its use.

Računalniška igra Labirint



Raziskovalca: David Murko, Benjamin Vesenjak

Mentorja: Marjan Čeh, Franc Vrbančič

Šola: Šolski center Ptuj – Elektro računalniška šola Ptuj

Recenzent: Daniel Tement

Povzetek:

Za to temo sem se odločil, ker me že nekaj časa zanima programiranje, sploh na področju računalniških iger. V to igro sem vključil moje najljubše elemente iz iger, ki sem jih igral. Zastavil sem si cilj, da izdelam zanimivo igro, v kateri bo uporabnik imel možnost igrati že izdelane stopnje ali izdelati svojo stopnjo. Najprej sem naredil osnovo igre (enostaven meni, play in create mode). Nato sem dodal enostavne ovire (zid, ključavnica, ključ). Zaradi premajhne težavnosti stopenj sem dodal zahtevne ovire (skala, led, razpoka) in sovražnike, ki se lahko premikanjo navpično ali vodoravno. Pri kreiranju stopenj se je pojavil problem, saj je uporabnik izdelal stopnjo in jo lahko igral, ko pa je zapustil stran pa so se podatki o njej izgubili. Zato sem uporabniku dal možnost, da shrani izdelano stopnjo v datoteko in jo prenese na računalnik, preneseno datoteko lahko pozneje naloži v igro in nadaljuje z izdelovanjem njegove stopnje. Da bi izboljšal uporabniško izkušnjo, sem dodal možnost prijave ali registracije uporabnika. S tem sem omogočil uporabniku da shrani svoj napredek pri igranju igre in da lahko shrani izdelane stopnje v bazo podatkov in do njih pozneje dostopa. Pri tem sem imel dosti težav, saj podatki ob slabši internetni lahko potujejo od uporabnika do baze tudi več sekund, kar pa je povzročalo probleme pri nalaganju shranjenih stopenj. Problem sem rešil tako, da aplikacija počaka, da dobi odgovor s podatki in takrat nadaljuje.

Računalniška igra po meri



Raziskovalec: Matej Sardinšek

Mentor: David Drogenik

Šola: Šolski center Ptuj – Elektro računalniška šola Ptuj

Recenzent: Daniel Tement

Povzetek:

Namen te naloge je, da sem moral narediti svojo računalniško igro. Izbral sem si to nalogo zato, ker se mi je ta tema zdela zelo poučna in me je zelo navdušila. Vedno me je zanimalo, kako so igre narejene in skozi kakšen proces gredo preden so prodane po vsem svetu. Ta veda se še danes širi in se vedno najdejo novi načini za izdelavo iger, predvsem nastanek novih idej, zgodb in okolij.

Predem sem začel izdelovati svojo igro, sem potreboval načrt, v katerem sem oblikoval svojo idejo in kaj bo moja igra vsebovala. Odločil sem se za arkadno igro, ki bo izdelana v programu GameMaker Studio Pro in je lahko igrana na namiznem računalniku, ki ima nameščen operacijski sistem Windows 7 ali Windows 10. Cilj igre je, da premagaš vse sobe in prideš do konca.

Med izdelavo sem naletel na nekaj težav glede programiranja igre, predvsem so bile težave z interakcijo igralca z njegovim okoljem. Imel sem še tudi par težav z dodajanjem novih sob in kaj naj bi vsebovale. S pomočjo interneta in svojega mentorja sem lahko razrešil vse težave, ki sem jih imel.

Igra je bila ustvarjena z namenom, da se ob njej zabavaš ter preganjaš dolgčas. Ob tem še je namen izdelave bil, da sem se lahko naučil, kako so igre načrtovane, izdelane in da pri tem dobim izkušnje le-tega.

Summary:

The purpose of this task was for me to create my own computer game. I picked this task due to it being an interesting and educational topic, as well as it being in my interests. I always wanted to know how people created games and through what process they had to go through before being released throughout the whole world. This knowledge is still being researched to this day and new ways to develop games are arising, mostly consisting of new ideas, stories and development environments.

Before I started making my game I needed a plan where I shaped my idea and figure out what things my game will have. I decided to make an arcade game that was created with GameMaker Studio Pro and it was able to be played on desktop computers that ran the operating system Windows 7 or Windows 10. The goal of the game is to beat all rooms and reach the end.

While I was developing my game I encountered a few problems, which were mostly related to interaction with the player and his environment. I also had a few issues making the levels for the game and what they would contain.

The game's purpose is to enjoy yourself with it and to kill time. Its purpose has also let me learn about how games are made, planned and I was able to gain experience in those fields.

UVRSTITVE NA DRŽAVNEM SREČANJU MLADIH RAZISKOVALCEV SLOVENIJE

Murska Sobota, 15. maj 2017

OSNOVNE ŠOLE

ŠOLA	NASLOV NALOGE	PRIZNANJE
OŠ Olge Meglič	Vpliv glasbe na učenje in Mozartov učinek	ZLATO
OŠ Anice Černejeve Makole	Povej mi geslo in povem ti, kdo si	ZLATO
OŠ Gustava Šiliha Laporje	Odnos do zajtrkovanja	SREBRNO
OŠ Ormož	Tete iz ozadja	SREBRNO
OŠ Pohorskega odreda Slovenska Bistrica	Značilnosti antiutopije v romanu Razcepljeni	SREBRNO
OŠ Velika Nedelja	Pustne maske v okolici Podgorcev v sredini 20. stoletja	SREBRNO
OŠ Gustava Šiliha Laporje	Vpliv voznikov na varno pot v šolo	SREBRNO
OŠ Mladika	Ribolov na Ptujskem jezeru in Dravi	SREBRNO
OŠ Mladika	Soba za sprostitev na OŠ Mladika	BRONASTO
OŠ Ormož	Umetnost učenja	BRONASTO
OŠ dr. Franja Žgeča Dornava	Igraj se z menoj!	BRONASTO
OŠ Središče ob Dravi	Pohvala se po šoli vala	BRONASTO
OŠ Olge Meglič Ptuj	Arhitekturna dediščina Ptuja in njen vpliv na turizem	BRONASTO
OŠ Ljudski vrt	Skriti kotički Ptuja	BRONASTO
2. OŠ Slovenska Bistrica	Partizanska bolnišnica Jesen	BRONASTO
OŠ Kidričevo	Kako lepo diši!	BRONASTO
OŠ Pohorskega odreda Slovenska Bistrica	Origano in pica kot »rit in srajca«	BRONASTO
OŠ Središče ob Dravi	Ječmen ni samo za v ričet	BRONASTO
OŠ Antona Ingoliča Sp. Polskava, podr. Pragersko	Prvi poljub s Pragerskega	BRONASTO
OŠ Olge Meglič	Primerjava elastomobilov	BRONASTO
OŠ Gustava Šiliha Laporje	Barvanje naravnih in umetnih tkanin z naravnimi barvili	BRONASTO
OŠ Ormož	Tartinijevi toni	BRONASTO
OŠ Gustava Šiliha Laporje	Spletno nakupovanje	BRONASTO

SREDNJE ŠOLE

ŠOLA	NASLOV NALOGE	PRIZNANJE
Gimnazija Ormož	Primerjava Shakespearovih in Prešernovih sonetov	SREBRNO
Gimnazija Ormož	Ustreznost šolskega pohištva	SREBRNO
Gimnazija Ptuj	Sferična trigonometrija	SREBRNO
Gimnazija Ormož	Vinogradništvo v Ormožu in okolici	BRONASTO
ŠC Ptuj, Ekonomska šola	Za kaj srednješolci trošimo denar?	BRONASTO

ABECEDNI SEZNAM OSNOVNIH ŠOL

OSNOVNE ŠOLE
2. OŠ Slovenska Bistrica
OŠ Anice Černejeve Makole
OŠ Antona Ingoliča Sp. Polskava, podružnica Pragersko
OŠ dr. Franja Žgeča Dornava
OŠ Gustava Šiliha Laporje
OŠ Hajdina
OŠ Kidričevo
OŠ Ljudski vrt Ptuj s podružnico Grajena
OŠ Markovci
OŠ Mladika
OŠ Olge Meglič
OŠ Ormož
OŠ Pohorskega odreda Slovenska Bistrica
OŠ Središče ob Dravi
OŠ Velika Nedelja

ABECEDNI SEZNAM MLADIH RAZISKOVALCEV OSNOVNIH ŠOL

RAZISKOVALCI OŠ
Ajda Ritonja
Alen Rožkar
Anej Podgorelec
Blažka Gradič
Eva Jug
Eva Kokot
Filip Rap
Filip Teo Vidovič
Franka Škorjanec
Gal Jeza
Hana Potočnjak
Hana Zajšek
Jaka Horvat
Jana Repič
Jure Kekec
Karolina Leskovar
Katja Košič
Lana Kozjak
Lana Simonič
Lana Vajda
Lara Majč
Larisa Šek
Lea Arnejčič
Lea Husel
Lea Samec
Lena Rimele
Lina Jenšac
Lovro Tušek
Lucija Janžekovič
Luka Tropan
Luka Urban Kitek
Manja Ekart
Maša Gašparič
Maša Žnidarič
Matic Petek
Miha Muršec
Miha Sterkuš
Nastja Meško
Neja Veit
Nina Ber
Nina Bokša

RAZISKOVALCI OŠ
Sara Bevc
Sara Planinšek
Sara Rosalia Gutschi
Sonja Topolovec
Suzana Cvetko
Špela Borko
Tanaja Čeh
Teja Medved
Tibor Vito Šušnjara
Tilen Hebar
Tinkara Novak
Tjaša Šterbal
Zala Cunk

ABECEDNI SEZNAM MENTORJEV OSNOVNIH ŠOL

MENTORJI OŠ
Aleksander Šterman
Aleksandra Kociper
Ankica Pikula
Asja Kamenšek
Barbara Čretnik
Bojana Marin
dr. Andrej Šafhalter
Elka Mlakar
Igor Keber
Jana Jerenec
Jure Cvahte
Katja Leva
Kristina Podgorelec
mag. Aleksandra Čeh
mag. Maja Korban Črnjavič
mag. Renata Debeljak
Majda Kramberger Belšak
Marija Feguš Friedl
Marija Meklav
Marjeta Sušec
Marjetka Čas
Martina Prejac
Mateja Lašič
Mateja Simonič
Mateja Zupanec
Matejka Majcen
Neva Klanček
Nina Ančič
Nina Žnidarič
Renata Kovačič
Roman Bobnarič
Sanja Miškovič
Silva Hajšek
Sonja Lenarčič
Urška Hlupič Voda
Urška Stanko
Valerija Krivec
Vida Lačen
Viktorija Bezjak
Zlatka Prelog

ABECEDNI SEZNAM SREDNJIH ŠOL

SREDNJE ŠOLE
Gimnazija Ormož
Gimnazija Ptuj
ŠC Ptuj, Ekonomska šola
ŠC Ptuj, Elektro in računalniška šola

ABECEDNI SEZNAM RAZISKOVALCEV SREDNJIH ŠOL

RAZISKOVALCI SŠ
Ana Zemljič
Benjamin Veseljak
David Murko
Jaka Bezjak
Klara Branda
Matej Sardinšek
Sara Mlakar
Sara Novak
Tina Rizman Herga
Zala Ledinšek

ABECEDNI SEZNAM MENTORJEV SREDNJIH ŠOL

MENTORJI SŠ
David Drofenik
Franc Vrbančič
Karmen Plavec
mag. Aleksandra Štih
Marjan Čeh
Milica Selinšek
Patricija Koler
Simona Kokol
Vesna Pintarič

ABECEDNI SEZNAM RECENZENTOV

RECENZENTI
Anja Potočnik
Barbara Rižnar
Bojana Murko
Boštjan Koletnik
Daniel Tement
Darja Plajnšek
dr. Aleksandra Pivec
dr. Anamarija L. Mrgole
dr. Dragica Pešaković
dr. Janez Petek
Klavdija Srša
Klementina Pulko
Lidija Tušek
Stane Levart
Štefan Petek

IZVEDBO PROJEKTA SO OMOGOČILI:

Mestna občina Ptuj

Občina Destrnik

Občina Dornava

Občina Gorišnica

Občina Hajdina

Občina Juršinci

Občina Kidričevo

Občina Majšperk

Občina Ormož

Občina Slovenska Bistrica

Občina Središče ob Dravi

Občina Trnovska vas

Občina Videm

Občina Zavrč

FOTOUTRINKI















































