

City Challenge Report Card			
The City Challenge Theme		3. Regenerating Urban Space to Connect People in a Healthy Environment Project name: City microclimate - effect of green areas and its management	
School/Summer School		ZŠ Ledec nad Sázavou	Teacher(s) / Disciplines Michal Simandl – Biology, Chemistry Petra Holatová – Biology, Math
The planning phase	Problem (The What-question)	We wanted to find out how mowing the grass in the city affects the microclimate and biodiversity.	
	Relevance (The Why question)	The impulse for our topic was the different opinions of residents on the maintenance of green spaces in the city. One year, residents complained that all the areas in the city were constantly being mowed. When the city responded by leaving some grass areas unmowed, there were concerns about ticks and dissatisfaction that the lawns were not being maintained. We decided to investigate the biodiversity and microclimate of the grasslands in more detail.	
	Expectation / Hypothesis	We assumed that there would be more species (plants and insects) on the unmown areas, the pupils were afraid that there would be a lot of ticks in the tall grass. The temperature in the variously high vegetation - the pupils estimated that it would be approximately the same.	
	Methods (The How-question ¹)	<ul style="list-style-type: none"> Biodiversity mapping and temperature measurement - comparison of the difference between mowed and unmown areas informing the public (local newspaper Ledecský zpravodaj) how to keep grass areas in the city (why it is advantageous to leave some areas uncut) 	
	Participants² (The Who-question)	<ul style="list-style-type: none"> PULCHRA Science team + other classmates from the classes Ledec nad Sázavou Municipal Office - Department of the Environment, parents of the pupils and the public in the city 	
The implementation phase³	Activity 1 (e.g. literature, book review)	Study of information on the topic - mainly from websites (eg: https://ekolist.cz/cz/publicistika/rozhovory/nesekat-travniky-je-nesmysl-rika-odbornice-marie-strakova , https://www.telereceptar.cz/jak-obhospodarovat-pozemek-u-cha-s855CZ). Planning of experiments - soil temperature measurement (tall grass - medium - cut), water infiltration experiment, survey of plant and invertebrate species.	
	Activity 2 (e.g. gather data / information)	Experiments with running water on a slope / plain - on mowed / unmown areas. The experiment resulted in recommendations on flat surfaces where water can soak in, leaving the grass long. On the slope, on the other hand, the water drains quickly after vegetation - it is better to mow and maintain shorter vegetation.	
	Activity 3	Regular measurements and evaluation of results. <ul style="list-style-type: none"> We repeatedly (May, June) monitored plant and animal species (key usage and PlantNet and Google Lens applications) on three grass areas around the school. We also measured the soil temperature in the grass on the same areas. 	

¹ Please provide the keywords regarding both, the teaching approach and the research approach

² E.g. the science team members

³ Please provide support if possible through pictures, sketches, charts, student reflection or such

	Activity 4	<p>We processed the results into a graph and compared them.</p> <ul style="list-style-type: none"> • The pupils' hypothesis that they will find more species of plants and animals on uncut areas was confirmed. We just didn't come across ticks :-) • Soil temperatures varied between areas of different lengths of grass - see the chart the pupils created.
	Activity 5	Organisation of an open event (described below)
	City Challenge solution	<p>Recommendations for mowing lawns for the city - newspaper article. Informing of the city residents with the results of our research - placement of photos from the project in the information center (exhibition) - during the holidays.</p>
The documentation and reporting phase	Group or class (e.g. reports, posters etc)	<p>Survey for city residents - we compiled questions that we asked local residents. The pupils have not yet been able to process the outputs, but we are counting on the evaluation of the survey at the beginning of next school year.</p>
	School (e.g. school web page, school newspaper)	<p>We informed about our activities in Ledečský zpravodaj. We have not yet processed specific outputs from this year's project, but we informed about last year's project on waste, which we also presented this year at the Student Research Conference in Zbiroh.</p>
	Public (e.g. meeting, news media)	<p>Open event - Project day for the 1st degree with public participation in the Šeptouchov forest park. We presented our temperature measurement experiments and biodiversity survey to our younger classmates. They tried measuring with a soil thermometer and sliding with a slider. The event was also attended by local citizens, but unfortunately, due to the morning time of the event, there were not many.</p>

Room for additional explanations (some feedbacks on main problems found and related solutions, or other observations are very appreciated)

Part of our plan was to map the grasslands in the city after the experiments and to propose specific measures (mow - not mow). This completion of the project will probably take place at the beginning of the following school year.