



River effects on microclimate WORKSHEET 1A

Time available: 30 minutes

Location: in the classroom

Work-group: 2 groups of students working on the map. At the end, you share the

opinion with the other group, and prepare a final version.

"Which types of areas are the hottest in your town? And the coolest ones?"

"Where would you investigate the effect of the river and other cooling elements, on climate conditions and thermal perceptions?"

Decide where (on the map). Give an explanation to your decisions and list the materials you will need.





River effects on microclimate WORKSHEET 1B

Time available: 35 minutes

Location: in the classroom

Work-group: 2 groups of students defining the method. At the end, you share the

opinion with the other group, and prepare a final version.

"Which types of areas are the hottest in your town? And the coolest ones?"

"How would you investigate the effect of the river and other cooling elements, on climate conditions and thermal perceptions?"

Describe and list the materials you will need.





River effects on microclimate WORKSHEET 2 for the field trip

Time available: 60 minutes

While monitoring the air parameters, fill in this questionnaire about the personal perception of the environmental conditions at each stop that you have identified on the map.

Date: Tim	ne:	Gender 🗆 Male
Age:		Female
Clothing	 □ T-shirt □ Shirt (Short/ Long/No sleeves) □ Sweater (thin/normal/thick) □ Shorts, Pants (thin/normal/thick), □ Skirt (thin/thick), □ Dress (thin/thick) Colour □ dark □ light 	□ Jacket (thin/thick) □ Coat Colour □ dark □ light □ Shoes (thin/thick soled) □ Boots □ Socks (long / short) □ Sunglasses
Type of food / drink to	aken within 15 minutes prior to the walk	
Cold YES 🗆 NO 🗆	Warm YES □ NO □	

STOP A – Evaluation of the environmental conditions

Enviro cond	onmental litions	1.	Indicate ho	w y	you currently feel							
Time:			Cold					er cold varm	Wa	rm	Hot	
Air tempe	erature:	2.	How would	you	u prefe	er to	feel c	ıt this m	oment	?		
Air humidity:				Cooler No change			;	Warmer				
Shade/Su	un	3.	How do yo	. ih	ink the	4	our the	rmal ca	ndition		d bo	
о Ві	ig road	3.	improved of					imai cc	mainor	i wou	id be	
o N	larrow road	In	In relation to air temperature I higher I no change			ation	n to	In rela	tion to	In re	In relation to	
o P	ark					•		wind speed		_	irradiance	
o Ri	iver bank					□ higher □ hig					gher	
	Vith trees					•		□ no change□ lower			o change	
□ W	Vithout trees		owei		⊔ lowel		⊔ lOWel			□ lower		
1. In	ndicate the most	ANNO	(ING variabl	e in	n this moment							
Tem	nperature	ŀ	Humidity			Sun			Lack of sun			
Air n	notion	n Lack of wind				None			Oth	Other (indicate):		
2. In	ndicate the most	PLEASA	NT variable	in th	his mo	me	ent					
Temperature		ŀ	Humidity		Sun			Lack of sun				
Air	r motion	La	Lack of wind			None			Other (indicate):			
3. H	ow do you judge	e the ov	erall conditi	on?)							
Acceptable			Non acceptable									





Environmental conditions		4. Ind	icate h	ow you	currently f	eel			
Time:		Cold	Cold Cool Neither cold Warm or warm				rm	Hot	
Air temperature:		5. How would you prefer to feel at this moment?							
Air humidity:		Cooler No change						Varmer	
Shade/Sun		6. How do you think that your thermal condition would						م ما امان	
Big road				at this m		nermai c	onaille	on wo	old be
Narrow road		In relation		_	ation to	In relat	tion to	In r	elation to
o Park		temper	ature	humi	dity	wind s	peed	irra	diance
River bank		•	□ higher □ higher □ l						igher
With trees		<u> </u>			change	□ no cl	_		o change
Without trees						□ lowe	ľ		ower
7. Do you feel a	ny differe	ence con	npared	to the p	revious si	e?		I	
Colder	Cod	ooler No change Warmer				ŀ	Hotter		
8. Why? Is there	any diffe	erent eler	ment in	the spa	e around	l you?	·		
9. Indicate the n	nost ANN	NOYING V	/ariable	in this r	noment				
Temperature		Humid	lity		Sun		Lack of sun		
Air motion		Lack of v	wind		None		Other (indicate):		
10. Indicate the n	nost PLEA	ASANT va	riable i	n this mo	ment	•			
Temperature		Humidity Sun				ļ	Lack of sun		
Air motion		Lack of v	wind		None		Oth	ner (in	dicate):
11. How do you ju	dge the	overall o	conditio	n?		<u>'</u>			
Acceptable				Non acceptable					

STOP C – Evaluation of the environmental conditions

Environmental conditions		Indicate how you currently feel								
Time:	••••	Cold Cool Neither cold Warm or warm						m	Hot	
Air temperature:		2. Hov	w would	you pref	er to feel	at this n	nomen	t?		
Air humidity:			Cooler		No	change		Warmer		
Shade/Sun		0 11-		11-1-1-11-			1*1* -			
o Big road		3. How do you think that your thermal condition would be improved at this moment?						uia be		
Narrow road		In relation to air In relation to In relation t				on to	o In relation to			
o Park		•	nperature humidity		wind speed		irradiance			
o River bank		□ higher		□ higher		□ higher			□ higher	
With trees						□ no ch	•		no change lower	
Without trees		□ IOWEI)WEI	
4. Do you feel a	ny differe	v difference compared to the previous site?								
Colder	Cod	oler No cho		ange				Hotter		
5. Why? Is there	any diffe	erent eler	nent in th	ne spac	e around	you?			-	





6. Indicate the mos	st ANNOYING variable in t	his moment			
Temperature	Humidity	Sun	Lack of sun		
Air motion	Lack of wind	None Other (indica			
7. Indicate the mos	st PLEASANT variable in thi	s moment			
Temperature	Humidity	Sun	Lack of sun		
Air motion	Lack of wind	None	Other (indicate):		
8. How do you judg	ge the overall condition?				

STOP D – Evaluation of the environmental conditions

Environmental conditions		1. Ind	icate h	ow you c	urrently fe	eel			
Time:		Cole	d	Cool	Neither cold or warm		War	m	Hot
Air temperature:		2. How would you prefer to feel at this moment?							
Air humidity:			Cooler No change					Warmer	
Shade/Sun			C001C1		140	change			Wanner
o Big road					nat your th	nermal c	onditio	n wo	ould be
Narrow road				at this mo		T			
o Park		In relation			ition to	In relat	-		elation to
o River bank		temper		humic	,	wind sp			diance
□ With trees		□ highei □ no ch		□ high	iei change	□ highe □ no cl			igher o change
		□ lower	arige		•	□ lowe	•		
□ Without trees									
4. Do you fe	el any d	ifference	compo	ared to th	e previou	s site?	•		
Colder	Co	Cooler No change Warmer					Hotter		
5. Why? Is th						-	?		
6. Indicate t	he most			<u>able in th</u>		<u>ıt</u>			
Temperature		Humic	lity		Sun		Lack of sun		
Air motion		Lack of	wind		None		Other (indicate):		
7. Indicate t	he most	PLEASAN	T varial	ole in this	moment				
Temperature		Humic	lity		Sun		Lack of sur		of sun
Air motion		Lack of	wind		None		Other (indicate):		
8. How do y	ou judge	the ove	rall con	dition?		•			
Acceptable				Non acceptable					





Environmental	1. Indicate how you currently feel									
conditions				l		T				
Time:	Cold		Cool		er cold varm	Warn	n	Hot		
Air temperature:				<u> </u>		<u> </u>				
Air humidity:		would y	ou pret			moment		O. K. O. K.		
Shade/Sun		ooler do you	think th		ange bermal	conditio		armer		
Big road		roved at		-	memmai	Condino	ı wo	old be		
Narrow road	In relation			tion to	In relat	ion to	In r	elation to		
o Park	tempera		humic		wind sp	peed		diance		
River bank	□ higher		□ high	er	□ highe	er	□h	igher		
□ With trees	no cha	ınge	□ no		□ no cl	_		o change		
□ Without trees	□ lower		chang	-	□ lowe	r		owerl		
			□ lowe	er						
4. Do you feel any diff	erence com	pared to	the pr	evious si	ite?					
Colder	Cooler	No cho	inge	W	'armer		ŀ	Hotter		
5. Why? Is there any a	lifferent elem	nent in th	e spac	e aroun	d you?					
, ,			•		•					
	ANNOYING variable in this moment									
Temperature	Humidi	Humidity		Sun			Lack of sun			
Air motion	Lack of w	vind		None Othe		Other (indicate):				
7. Indicate the most P	LEASANT var	iable in t	his moi	ment						
Temperature	Humidi	ity Sun				Lo	ack d	of sun		
Air motion	Lack of w	of wind None				Other (indicate):				
8. How do you judge	he overall c	ondition	?							
Accepta	ble	Non ac				cceptable				
9. How many different	thermal sen	sations o	lid you	perceiv	e during	the wall	k?			
10. Excluding the POIN	TS, have you	noticed	other o	different	conditio	ns along	the	way? (if so,		
indicate on the ma	-	oint /i)								
Yes 🗆 No 1										
11. What did you like m		e way?		<u> </u>	1	0.1				
Shade	Sun			Clouds		St	rong	wind		
Breeze	Lack of wind Other:									
12. Thermally speaking	, indicate th	e most P	LEASAN	IT aspec	t during	the walk				
Aspect	Position along the walk									
13. Thermally speaking	, indicate th	e most A	NNOYI	NG aspe	ect durin	g the wa	ılk			
Aspect										
14. Did you take any in (inaested liquids/fo				se of we	ll-being	during th	ne jo	urney?		





River effects on microclimate WORKSHEET 3

After the data analysis, you should be able to answer these questions:
Which is the hottest stop along the route? What are the characteristics?
Which variable was the most annoying for most respondents by the river?
Which variable was the most pleasant by the river?
Which variable is the most annoying farther from the river for most respondents? What are the characteristics?
Which variable is the most pleasant farther from the river for most respondents? What are the characteristics?

Are there differences between males and females in the thermal perception?





"In urban planning, what kind of areas are important to provide the best thermal comfort?"

Design on the map of your town where you would include green or blue infrastructures for improving the thermal comfort.