YOUNG SMART CITIES

Co-funded by the European Union

Student Worksheet: Greening the City

Name	Class	Date

Big Question: How can nature-based solutions make cities healthier, cooler, more resilient, and better for biodiversity?

Urban green and blue spaces can help cities respond to climate change by cooling neighbourhoods, improving air and water quality, managing stormwater, supporting biodiversity, and creating places for recreation and social interaction.

Lesson 1: How Nature Can Help a City

Activity 1: Urban Challenge Starter

Choose the top three urban challenges that greening can help address in your city.

City challenge		City challenge	
Urban heat		Noise pollution	
Air pollution		High cooling demand	
Flood risk		Stormwater runoff	
Loss of biodiversity		Need for recreation and relaxation	

My/our top challenge is: _____

Outline why it matters in your city:

_____

_____

Activity 2: Green, Blue, or Nature-Based?

Nature-based solutions use or mimic natural processes. Green infrastructure focuses on vegetation, while blue infrastructure focuses on water features. Classify each example as Green or Blue and briefly explain your choice.

City idea	Category	Why?
Green roof		
Rain garden		
Urban forest		
Restored wetland		
Tree-lined street		
Restored waterway		
Green wall		

Choose one example. Which city challenge could it address, and what benefit would it bring?

_____

_____

_____

_____

Activity 3: Greening City Ingredients

Match each term to the correct definition.

Term	Definition
1. Nature-Based Solutions	A. Water-related urban features such as rivers, wetlands, ponds, fountains, and stormwater systems.
2. Green infrastructure	B. The phenomenon of higher temperatures over urban land than surrounding rural land.
3. Blue infrastructure	C. A feature that captures carbon dioxide, such as trees and plants through carbon sequestration.
4. Urban heat island	D. Interventions that use nature or mimic natural processes to address urban challenges.
5. Carbon sink	E. Vegetation-based urban features such as parks, gardens, tree-lined streets, and green roofs.

Answers: 1 = ___ 2 = ___ 3 = ___ 4 = ___ 5 = ___

Activity 4: People and Nature

Choose one greening idea from Activity 2. Explain how different groups could benefit from it.

Citizen / city group	How could they benefit?
Children and young people	
Older people	
People exercising outdoors	
People living in hot areas	
People in flood-prone areas	
Urban wildlife	

Explain the most important co-benefit you have observed:

_____

_____

Lesson 2: Design a Greening Solution

Activity 5: Greening Solution Lab

Choose one city challenge for your team.

Challenge	Tick
Reduce urban heat	
Improve air quality	
Manage stormwater	
Reduce flood risk	
Support biodiversity	
Create green recreation and relaxation space	
Reduce noise pollution	
Other: _____	

Activity 6: Build Your Idea

Identify and define briefly the city challenge you aim to address:

_____

_____

_____

Which nature-based or green/blue elements will you use to address your challenge? Tick all that apply.

Tool	Tick	Tool	Tick
Green roof		Rain garden	
Green wall		Wetland	
Urban trees / forest		Waterway / pond	
Park or garden		Other: _____	

Give a brief outline of how your solution/s will work to solve the challenge:

_____

_____

_____

Identify who benefits from introducing this solution:

_____

_____

_____

Outline how it supports climate resilience and/or sustainability:

_____

_____

_____

Outline how it supports health, recreation, and/or biodiversity:

_____

_____

_____

Check at least two design questions you need to consider.

Consideration	Tick	Consideration	Tick
Is it locally adapted?		Could anyone be negatively affected?	
Is it cost-effective to create?		Could it create new problems?	
Is there enough space for it?		Does it fit the urban fabric?	
Is it easy to maintain?		Other: _____	

Explain how you will strengthen the idea based on these questions:

_____

_____

_____

Activity 7: Draw Your Prototype

Draw your greening idea. Show where it is used, the green/blue elements, the city challenge it addresses, who benefits, and at least one environmental benefit.

Activity 8: 60-Second Pitch

Prepare a 60-second pitch for your idea by addressing each of these 6 steps:

Starter	Notes
1. The city challenge is	
2. Our nature-based solution is	
3. It uses green/blue infrastructure by	
4. It helps people because	
5. It supports resilience/biodiversity because	
6. One design question we tested was	

Activity 9: Peer Review

Ask your peers for feedback on your pitch, addressing these 4 steps:

Question	Feedback
Strongest part of the idea	
Which challenge does it address?	
What benefits does it create?	
One improvement suggestion	

Exit Ticket

Now, merge your ideas with a general understanding of urban greening by completing these sentences.

Sentence starter	Complete the sentence
Urban greening can make cities more resilient because	
One example of a nature-based solution is	
Green and blue infrastructure are different because	
My favourite greening idea from today was	

Teacher Notes

Learning objectives

- Explain why urban greening matters for climate resilience, health, and biodiversity.
- Distinguish nature-based solutions, green infrastructure, and blue infrastructure.
- Identify multiple benefits of urban green and blue spaces.
- Design a locally adapted greening idea that addresses a city challenge.
- Explain or ask students to read the YSC Knowledge Pill: https://youngsmartcities.com/learn/greening-cities/

Suggested timing

Lesson	Timing
Lesson 1	10 min Activity 1 | 20 min Activity 2 | 10 min Activity 3 | 15 min Activity 4
Lesson 2	10 min Activity 5 | 20 min Activity 6 | 15 min Activity 7 | 15-20 min Activities 8-9 | 5 min Exit Ticket

Differentiation

Younger students: use pictures or local examples and accept short explanations. Older students: ask students to connect one intervention to several benefits and explain why a locally adapted, resource-efficient solution may be stronger than a single-purpose idea.