YOUNG SMART CITIES

Co-funded by the European Union

Student Worksheet: Smart City

Name	Class	Date

Big Question: How can technology help make a city more inclusive, safe, sustainable, and enjoyable for everyone?

A smart city uses data, digital tools, and citizen ideas to solve real city problems, such as traffic, pollution, energy use, waste, safety, accessibility, and public services.

Lesson 1: What Makes a City "Smart"?

Activity 1: Smart City Starter

Choose three city problems that matter most to young people.

City problem		City problem	
Traffic jams		Poor public transport	
Air pollution		Too much waste	
Unsafe streets		Lack of youth spaces	
Not enough green space		Flooding or extreme heat	
High energy use		Digital exclusion	

My/our top problem is:

_____

Outline why it matters, and who is affected:

_____

_____

Activity 2: Is It Really Smart?

Not every technology makes a city better. A smart city idea should solve a real problem, help people, save resources, or improve decisions. It should also be fair, safe, sustainable, and respectful of privacy.

Rank each idea as either A, B or C and briefly explain your choice.

Codes: A = Really smart | B = Just techy | C = Risky / needs more thought

City idea	A/B/C	Why?
Solar-powered bench with free Wi-Fi		
Cameras with unclear data rules		
Giant advertising screen in a town square		
Smart bins that report when they are full		
App to report broken lights or unsafe areas		
Traffic-responsive lights		
Bus app for expensive phones only		
Motion-sensitive streetlights		

Choose one idea marked C. Idea: _____

Why is it useful? _____

Why is it risky/unfair? _____

How could it be improved?

_____

_____

_____

Activity 3: Smart City Ingredients

Match the term to the right definition.

Term	Definition
1. Data	A. Connected devices, such as sensors or smart thermostats
2. Good governance	B. Information collected from people, places, devices, or services
3. IoT (Internet of Things)	C. Technologies for communication, such as phones and internet
4. Sustainability	D. Fair and responsible decision-making
5. ICT (Information Communication Technology)	E. Meeting needs while protecting people and the planet

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

Activity 4: Citizen First

Choose one problem from Activity 1. Problem:_____

Explain how each group of citizens is impacted by this problem.

Citizen group	How are they affected?
Children	
Teenagers	
Elderly people	
People with disabilities	
Local businesses	
People with low income	

Most important insight you have observed:

_____

_____

_____

Lesson 2: Design a Smart City Solution

Activity 5: Smart Solution Lab

Choose one challenge for your team.

Challenge	Tick
Cleaner air	
Safer streets	
Better public transport	
Less food or plastic waste	
More green space	
Saving energy	
Heatwave or flood support	
Better accessibility	
Other: _____	

Activity 6: Build Your Idea

Identify the problem you aim to sove:

_____

_____

_____

What technology do you aim to make use of to solve it? Tick all that apply.

Tool	Tick	Tool	Tick
Sensors		ICT	
App or website		IoT	
Public data		Free wifi	
AI or data analysis		Other: _____	

Give a brief outline of how you aim to solve it:

_____

_____

_____

Identify who benefits from introducing this solution:

_____

_____

_____

Outline how you aim to ensure the solution is sustainable:

_____

_____

_____

Outline how you ensure the solution is fair and inclusive:

_____

_____

_____

Identify what could go wrong? Tick at least two items.

Risk	Tick	Risk	Tick
Privacy problems		People do not trust it	
Too expensive		Data is wrong	
Some people excluded		Uses too much energy	
Technology breaks		Other: _____	

Explain how you will reduce these risks:

_____

_____

_____

Activity 7: Draw Your Prototype

Draw your smart city idea. Show where it is used, the technology/data, citizen interaction, who benefits, and one sustainability feature.

Activity 8: 60-Second Pitch

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

Starter	Notes
1. The problem is	
2. Our solution is	
3. It uses technology by	
4. It helps citizens because	
5. It is sustainable and fair because	
6. One risk is... and we will solve it by	

Activity 9: Peer Review

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

Question	Feedback
Strongest part of the idea	
Who benefits?	
Is it sustainable and inclusive?	

One improvement suggestion	

Exit Ticket

Now, merge your ideas with a general understanding of what a smart city is by addressing these 4 steps

Sentence starter	Complete the sentence
A smart city is not just smart because it uses advanced technology. It is smart because	
One example of smart city technology is	
Before collecting data, city leaders should think about	
My favourite idea from today was	

Teacher Notes

Learning objectives

- The Worksheet can be completed individually or in groups of 3-4 students
- Explain what a smart city is or ask the students to read the YSC Knowledge Pill: https://youngsmartcities.com/learn/smart-cities/
- Identify how data, ICT, IoT, and citizen participation can improve city life.
- Distinguish useful smart technology from technology for show.
- Consider risks such as privacy, exclusion, cost, and trust.

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: allow discussion before writing and accept short answers. Older students: ask who owns the data, who might be excluded, whether a low-tech solution could work better, and how the city would measure success.