

CURRICULUM

Through Upcycling to the Design of Eco Cities





TUDEC – Through Upcycling to the Design of Eco Cities

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Module 1

SHARING THE CITY

“

If we wait for governments, it will be too late. If we act as individuals, it'll be too little. But if we act as communities, it might just be enough.
And it might just be in time.

(Rob Hopkins)

”

1. INTRODUCTION

The concept of the Sharing City means striving towards making the entire city our home - not only our homes we live in but our streets, our neighbourhoods and our public places. The city can nourish us, inspire us, offer us comfort, and provide for us, but it also needs our care and agency in return. The more we make our city our home, the more we have to care for it and maintain it just as we do with our homes. Urban infrastructure can be used by everyone, but is also dependent on everybody's responsibility. It can reflect how we want to live in cities and what we want to be our guiding principle of social interaction: solidarity instead of competition. A societal self-conception of mutual appreciation and support can be woven into the fabric of the city by supporting how people can share resources, skills and space in the city.

The Sharing-City-movement has proven, that community-based solutions can be implemented on all levels of a city's administration. From housing, waste treatment, energy and water management to food provision and mobility (Shareable, 2018, [\(check out Further Exploration 5\)](#)). Those solutions often started in a small circle: In the family, in the neighbourhood, in a classroom, in an office and proved later on that they can keep up with market-based solutions. This is because, as noble price winner Elinor Ostrom explored, commons-based resource management is often more efficient and long-lasting than state or market approaches (Vulk Coop, 2020).

Commons are the material and non-material goods that are shared within a society: "The wealth that we inherit or create together and must pass on, undiminished or enhanced, to our children. Our collective wealth includes the gifts of nature, civic infrastructure, cultural works and traditions, and knowledge. A sector of the economy (and life!) that generates value in ways that are often taken for granted – and often jeopardized by the Market-State." (Bollier, 2011, [\(check out Further Exploration 1\)](#)).

But in fact, the commons is also the relationship between a resource and its users. It includes the value we attribute to our resources and how we want our fellow city dwellers to enjoy the same resources as we do.

In our kindergartens and schools, sharing is a principle that is taught to kids from a very young age, as it secures peace and establishes equality. What if we took that as a model for all urban interactions as a bottom-up approach to inclusion and participation? Sharing as a principle that kindergarten children can grasp seems simple, but in fact can be a revolutionary act of redistribution, to provide more people access to more resources. Let's explore how this can be initiated at a young age, teaching them a sharing mindset and as teachers by modelling it on as many levels as possible.



Library of Things is a social enterprise in London, UK that helps people save money and reduce waste by affordably renting out useful items like drills, sound systems and sewing machines from local spaces – and by helping neighbours share practical skills.
<https://www.libraryofthings.co.uk/>
Credit: Library of Things Ltd. UK

1.1 SHARING THINGS AND SKILLS AT SCHOOL

The school community is an ideal example of a society where different talents, (financial) resources and interests exist. Kids can experience how it is to support, help, and learn from each other. This is at the core of sharing the city. The community is the true secret weapon for bypassing the unequal distribution of resources. Oftentimes, schools prepare students for the competition of talent and resources, reiterating the zero-sum-theorem that whenever someone gets more, it is taken from someone else. In fact, this kind of thinking might be true for some things, but this is not true for most live-enriching things (material and immaterial). Where there is a culture of sharing, more resources are available, solidarity grows, connection grows and appreciation for the common good as well (Clarke and Rockefeller, 2020).

The more people contribute, the richer the school community becomes. This affects not only material resources but also immaterial goods. Imagine what different talents are represented in a school community beyond academic skills. In what way could a school community express its diversity if everyone's talents were appreciated?

Regarding material possessions, this rethink can also facilitate a less materialistic world-view in kids, as wealth and abundance are not perceived individually but as a community. Simultaneously, marginalisation and bullying due to a lack of financial resources can be opposed, and material resources lose value as the currency of social distinction. While this might sound idealistic, there are many ways a school community can foster sharing and even stimulate learners to expand the sharing mindset to new territories.

CONNECTED TOPICS IN CURRICULUM



SUBJECT: Ethics, learning area "I in the We"

SUBJECT: Science lessons / STEM, learning area "Life in Community":

- Similarities and differences between people / between children and adults
- Passions, talents, dealing with disabilities
- Reflection on own strengths and weaknesses

SUBJECT: Ethics, learning area "We in the world":

- Experiences and ideas of justice and injustice

1.2 SHARING IN THE COMMUNITY

Why should we expand a sharing mindset beyond our friends, beyond our family and beyond our school community? What can we win as a society if we share with our neighbours next door, but also next house, next block?

Sharing in a community can be anything from sharing a garden or a washing machine in your building to sharing cars. Some neighbourhoods are dense, and actually, density is considered by city planners as a solution to the high environmental impact of cities as opposed to the suburban sprawl (Sim and Gehl, 2019), where space for biodiversity is lost, and an immense amount of resources needs to be invested (Smart Prosperity Institute, 2023). Even though it is environmentally smart to live with less space (e.g. to heat or cool), fewer resources and possessions, this kind of behavioural change is hard to force. Sharing is the key to turning doing without into abundance. How many things do we own that take space and

are not used regularly? They might have been produced under exploitative conditions, most probably been shipped across the ocean and will take a lot of effort to be discarded properly. This negative environmental impact can be improved fundamentally if it is at least made to good use (Clarke, 2023). Cities are predestined to widely apply sharing, as it reduces land-use footprint, saves budgets in low-income neighbourhoods, and gives them access to resources they might not otherwise have access to (like using electric cars or cargo bikes).

CONNECTED TOPICS IN CURRICULUM



SUBJECT: Ethics, learning area "We in the world":

- Difference between natural world, man-made world and world of thought
- Shaping and preserving our world
- Experiences and ideas of justice and injustice

SUBJECT: Science lessons / STEM, learning area "Life in Community"

- Opportunities of participation and co-determination (class, school, family, neighbourhood, community ...)

SUBJECT: Science lessons / STEM, learning area "Work and consumption" / "A product of our country":

- Production processes
- Selection criteria for purchase (benefits of the product, longevity, global transport routes, waste avoidance, ecological aspect, fair trade)
- Desires, needs and their fulfilment - building reflective and self-regulated consumer behaviour



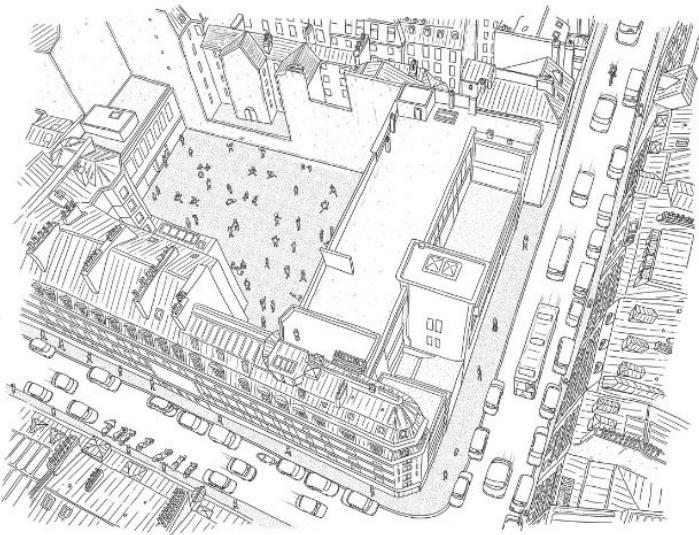
Sharing cargo bikes in Leipzig, Germany. The TINK network supports cities in establishing an infrastructure for cargo bike sharing.
Source: City of Leipzig, Roland Quester



1.3 SHARING SPACE AND TRANSPORT

Public space in the city has been imprinted by the car. Streets that catered mainly to motorized transport are often hostile for pedestrians, especially from a child's perspective (and height). Driveways fragment sidewalks, parked cars obstruct the view, and pedestrian crossings can be hard to oversee. Overall, those conditions make independent movement in the urban space a challenge for children and also for people with seeing, hearing or walking impairments. Creating an inclusive city, therefore, unavoidably means shifting incentives from private motorized transportation to collectively more efficient and inclusive forms of transport. These must be diverse to address the demands of as many people as possible. Giving up cars in the urban streetscape can create space for an infrastructure that supports public transport, biking and walking. All of which have less or no negative impact on the environment. On the contrary, the opportunity for physical movement has numerous positive effects on our physical and mental health. Walkable neighbourhoods generate also connections and make us feel more at home in public as they allow more encounters with our neighbours (Montgomery, 2015).

With less emphasis on the car, streets can evolve into multifunctional, inclusive spaces that make cities environmentally but also socially sustainable. Urban planners and city legislators worldwide are discovering the multi-faceted potential of redistributing urban space. The guiding star for this development is the City of Barcelona's SUPERILLES – SUPERBLOCKS. With the slogan "Let's fill the streets with life", in 2015, the municipality started transforming street networks into car-free zones allowing cyclists, public transport and pedestrians to reclaim the street (Roberts, 2019). Parisien mayor Anne Hidalgo implements a similar concept with the 15-minute-city (Luscher, 2021). This concept aims to bring back to residents' arm's length the services that were outsourced to shopping centers and designated commercial zones. They create mixed-use cities that provide residential areas and commercial, health, cultural and leisure services (Moreno, link to Further Exploration 4). By reorganizing and topping up local services, assigning multiple purposes to the common space and adapting the rhythm of the neighbourhoods to humans, not cars, Hidalgo is making the most of Paris' already existing density. Nicolas Bascop's illustration for Paris en commun gives a vivid impression of a schoolyard and adjacent street corners before and after the transformations in progress (Paris en Commun, 2020).



Transformation of a school yard into an accessible multi-functional space for the community.

Title: Paris en commun, Ecole avant après

Credit: Nicolas Bascop, www.nicolasbascop.com

The infrastructure change delivers new incentives to cyclists and pedestrians to reduce transport-related carbon emissions and air and noise pollution. For children and families who live on those streets, this transformation provides a safe, walkable and playable surrounding (ARUP, 2017, see also Further Exploration 3). At the same time, it creates an infrastructure that allows people of all ages and abilities to move and provide for themselves independently. The additional benefit of such a transformation is creating opportunities for connection and by such, significantly improving the actual quality of life (Montgomery, 2013).

CONNECTED TOPICS IN CURRICULUM



SUBJECT: Ethics, learning area "Togetherness"

SUBJECT: Science lessons / STEM, learning area "Life in Community"

- Different forms of social life (family forms, class and school community, "home" ...)
- Relationships between the generations

SUBJECT: Art, Learning Area "Physical-Spatial Design"

- Experimenting with found materials or objects
- Exploring indoor and outdoor spaces and their function and experiencing their atmosphere
- Designing interior and exterior spaces
- Designing objects of daily use
- Form and function of the built environment: architecture

SUBJECT: Science lessons / STEM, learning area "Encountering space and time"

- Getting to know the local/regional environment (school and school grounds, public facilities in the school and residential environment, traffic routes)
- Assessment/evaluation of local conditions
- Assessment/evaluation of own and other mobility concepts (transport-oriented, social, ecological)

SUBJECT: Science lessons / STEM, learning area "Living and learning together" / "Past, present and future":

- Changes in the city (importance of inner-city space, density in road traffic) - Future workshop, own possibilities for action

VISIONARY BOX



Verschenkekiste (=gift box) is a free shop in a low-income neighbourhood of Leipzig's east. We spoke with Anja Scherber, one of the initiators.

What is Verschenkekiste?

Anja: Verschenkekiste is a free shop which means you can come here and take anything you want or need. And the people are allowed to bring things, that's how the shop works: books, household items, clothes, children's toys, DVDs etc.

Buying new things, e.g., t-shirts for a few euros, can be quite cheap. Why should people come to you if they need something new?

Anja: We only have used things here in the shop, and that's also the core idea of the whole thing, that people don't consume new things in the sense of newly produced things, but rather start thinking about what they might be able to use second-hand. That way, things stay in the cycle longer, and resources are saved. And it's all free of charge to keep it low threshold.

Do you have a favourite transaction that happened in the shop?

Anja: I remember one particularly curious situation. Someone in the building moved out, bringing us knee bandages that he no longer needed. And I still had the knee bandages in my hand and didn't know where to put them in the shop. And while I was still wondering, a person came in and asked: Are these knee bandages? I have insane knee problems, and they're totally expensive. It was such a WIN-WIN-WIN-situation: The person who gave them away saw how they moved on, the person who got the bandages was really happy, and I didn't have to sort them and had experienced a beautiful sharing moment.

Can you think of any building block here in Leipzig that is still missing to make the city more sustainable?

Anja: I think there needs to be a free shop like this in every neighbourhood so that people don't have to travel far and so that it feels easy. I also think that this whole neighbourhood circular economy scene needs more support from the city, for example, by providing space or money for staff. And by that, I don't just mean free shops, but also libraries of things, material collections and repair cafés. And concretely, it would be nice if there was a food-sharing café here where rescued food could be processed. That's what this city is still missing!

<https://verschenkekiste.de/>



Verschenkekiste e.V., Credit: Lilja Friedemann

FURTHER EXPLORATION

David Bollier wrote the manifest on the commons and its potential to rebuild our society in a bottom-up and grassroots approach.

Bollier, D. (2017). Think Like a Commoner: A short introduction to the Life of the Commons. New Society Publishers.

Sheila Foster is a researcher and professor of environmental law and urban commons at Georgetown University. In this video, she is in exchange with two practitioners of the sharing movement. YouTube. (2017, October 31). Cities and Commons: Sheila Foster interview W Jerry Michalski and Neal Gorenflo.

YouTube. <https://www.youtube.com/watch?v=BkUaUuujuYU>

Read Arup's guide to the child-friendly approach: Cities Alive for more information on child-friendly cities. Designing for Urban Childhood. It is available online and provides 40 global practices of child-friendly urban interventions.

Arup (2017). Cities Alive. Designing for urban childhoods. <https://www.arup.com/perspectives/publications/research/section/cities-alive-designing-for-urban-childhoods>

Carlo Moreno is the pioneer of the 15-minute City movement, and in this TED Talks, he explains the four building blocks of the concept: Ecology, Proximity, Solidarity and Participation.

Moreno, C. (n.d.). The 15-Minute City. Carlos Moreno: The 15-minute city | TED Talk.

https://www.ted.com/talks/carlos_moreno_the_15_minute_city/details#t-457530

Shareable is THE online hub of all things sharing. Currently, they offer webinars, tools and templates for setting up a library of things in your community.

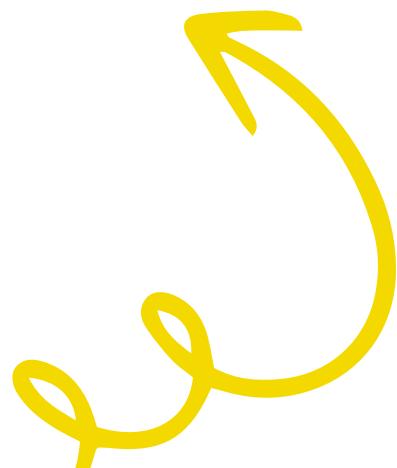
Library of Things Co-Lab. Shareable. (2023, June 14).

<https://www.shareable.net/library-of-things-co-lab/>

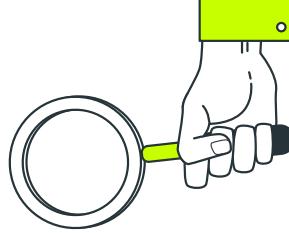


CONNECTED ACTIVITIES

- 1.1 The Sharing Space
- 1.2 The Sharing Space Including Learners with Physical Disabilities
- 1.3 The Multi-Lingual Sharing Space
- 1.4 The Community Sharing Map
- 1.5 The Community Sharing Map for Learners with different Abilities
- 1.6 Flea Market at School
- 1.7 Flea Market at School Including Learners with Physical Disabilities
- 1.8 Flea Market at School Including Learners with Dyscalculia
- 1.9 Talent Marketspace
- 1.10 Talent Marketspace for Learners with different Abilities
- 1.11 The Shared Party Kit
- 1.12 The Shared Party Kit for the Community
- 1.13 Streets are for People
- 1.14 Streets are for People – for Younger Learners
- 1.15 Streets are for People – Groups with Learners with Physical Disabilities
- 1.16 Streets are for People – the Teenage Edition
- 1.17 The Ultimate Bus
- 1.18 The Ultimate Inclusive Bus
- 1.19 The Ultimate Bus Technology
- 1.20 The Ultimate Bus Stop
- 1.21 The Walking School Bus
- 1.22 The Inclusive Walking School Bus



SOURCES



MODULE 1: Sharing the City

Arup (2017). Cities Alive. Designing for urban childhoods.

<https://www.arup.com/perspectives/publications/research/section/cities-alive-designing-for-urban-childhoods>

Bollier, D. (2011, July 15). The commons, short and sweet.

<https://www.bollier.org/commons-short-and-sweet>

Clark, L., & Rockefeller, R. (2020). The buy nothing, get everything plan: Discover the joy of spending less, sharing more, and living generously. Atria Books.

Luscher, D. (13 July, 2021). Access, not mobility. <https://www.15minutecity.com/blog/access>

Montgomery, C. (2015). Happy city: Transforming our lives through urban design. Penguin Books.

Moreno, C. (n.d.). The 15-Minute City. Carlos Moreno: The 15-minute city | TED Talk.

https://www.ted.com/talks/carlos_moreno_the_15_minute_city/details#t-457530

Paris en commun (2020). La ville du quart d'heure en images. <https://www.paris.fr/pages/la-ville-du-quart-d-heure-en-images-15849>

Roberts, David (May 26, 2019). Barcelona's radical plan to take back streets from cars. Introducing "superblocks". Vox.

<https://www.vox.com/energy-and-environment/2019/4/9/18300797/barcelona-spain-super-blocks-urban-plan>

Shareable (Ed.). (2018). Sharing cities. Activating the Urban Commons. Tides Center / Shareable. Free PDF download on: <https://www.shareable.net/sharing-cities/downloads/>

Smart Prosperity Institute. (n.d.). The cost of Sprawl. Smart Prosperity Institute.

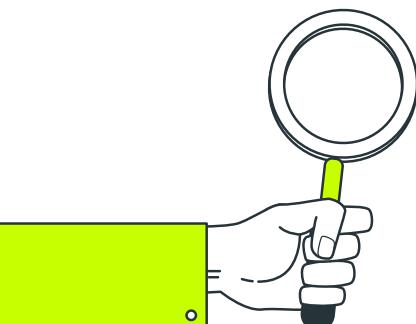
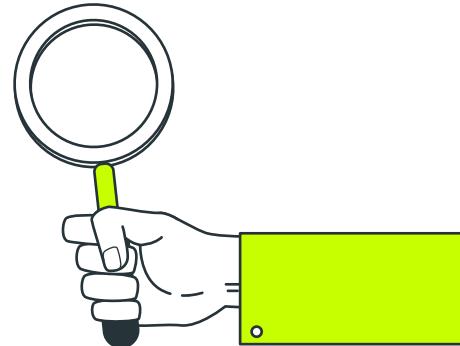
<https://institute.smartprosperity.ca/content/cost-sprawl>

Tessa, C. (2023, February 28). The surprising climate benefits of Sharing your stuff | tessa clarke | ted. YouTube. <https://www.youtube.com/watch?v=6DRMrFMNXCc>

Crowd Expedition. (2015, September 25). Local sharing and connecting through physical hubs: Dedeelkelder. YouTube. <https://www.youtube.com/watch?v=oC6g-sHjbTM>

Vulk Coop. (2020, May 6). Governing the commons in six minutes. YouTube.

<https://www.youtube.com/watch?v=B4hVbLjP1v8>



MODULE 2: Circular City

Chang, A. (2017, September 5). The life cycle of a T-shirt. YouTube.

https://www.youtube.com/watch?v=BiSYoeqb_VY

EU Science Hub. (n.d.). Definition of recycling.

https://joint-research-centre.ec.europa.eu/scientific-activities-z/less-waste-more-value/definition-recycling_en

Kaza, Silpa; Yao, Lisa C.; Bhada-Tata, Perinaz; Van Woerden, Frank. (2018). What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050. Urban Development. World Bank.

<http://hdl.handle.net/10986/30317>

LE Europe, VVA Europe, Ipsos, ConPolicy & Trinomics. (2018, October). Behavioural study on consumers' engagement in the circular economy. Publications Office of the EU.

<https://op.europa.eu/en/publication-detail/-/publication/0779f275-f9d6-11e8-a96d-01aa75ed71a1/language-en>

Norman Ebner, Eleni Iacovidou, (2021). The challenges of Covid-19 pandemic on improving plastic waste recycling rates. Sustainable Production and Consumption, Vo. 28, 2021.

<https://www.sciencedirect.com/science/article/pii/S2352550921002001>

Overstreet, K. (2020, July 17). Giving demolished building materials a new life through recycling. ArchDaily.

<https://www.archdaily.com/943293/giving-demolished-building-materials-a-new-life-through-recycling>

Playground Ideas. (2023). <http://www.playgroundideas.org/>

SDG 11 - sustainable cities and communities statistics explained. (n.d.).

<https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/63347.pdf>

The Story of Stuff. (2022, December 21). Imagining an economy where you don't have to buy anything | solving plastic. YouTube. <https://www.youtube.com/watch?v=kOskaCh8KXU>

Repaircafe. (2023, May 23). Repair café - fix your broken items. <https://www.repaircafe.org/en/>

Ro, C. (2022, February 24). Can fashion ever be sustainable?. BBC Future.

<https://www.bbc.com/future/article/20200310-sustainable-fashion-how-to-buy-clothes-good-for-the-climate>

UN Habitat. (2021). Waste wise cities tool. <https://unhabitat.org/sites/default/files/2021/02/Waste%20wise%20cities%20tool%20-%20EN%203.pdf>

UNIDO. (n.d.). Circular economy.

<https://www.unido.org/our-focus-cross-cutting-services/circular-economy>

United Nations. (n.d.). Goal 11 | Department of Economic and Social Affairs. United Nations. <https://sdgs.un.org/goals/goal11>

Waste recycling in Europe. (2022, November 11).

<https://www.eea.europa.eu/ims/waste-recycling-in-europe>

MODULE 3: City for All

Amadò, M., & Massa, L. (n.d.). Bambini, design e appropriazione del quartiere Il caso dei percorsi pedonali casa-scuola Rapporto di uno studio. Laboratorio Cultura Visiva.

Blades, M. and Spencer, C. (1986) Map use in the environment and educating children to use maps, Journal of Environmental Education and Information 5.

Community building: Logiche E strumenti di management: Longo Francesco, Barsanti Sara: Libro: Egea. HP. (n.d.).

<https://www.egeaeditore.it/ita/prodotti/economia/community-building-logiche-e-strumenti-di-management.aspx>

Dini, D., Longo, S., & Palladino, N (n.d.). Diventare città sostenibili: cosa può insegnare Tricase alla grande Milano. Il Sole 24 Ore.

Durkheim, E., & Baracani, N. (1979). Educazione come socializzazione: Antologia. La nuova Italia.

Franco, E. (2016, April 22). Placemaking, un modo diverso di pensare e vivere lo Spazio Pubblico. Giornale dell'Architettura.

<https://ilgiornaledellarchitettura.com/2016/04/22/placemaking-un-modo-diverso-di-pensare-e-vivere-lo-spazio-pubblico/>

Hart, R. (1979). Independent explorations: Children's experience of place. Irvington, New York, 1979 Science, 204 (4394).

Ikiz, S. U. (2023, July 26). Planning-by-doing: How can tactical urbanism help to create better urban spaces?. Parametric Architecture.

<https://parametric-architecture.com/planning-by-doing-how-can-tactical-urbanism-help-to-create-better-urban-spaces/>

Let's reclaim our #streetsforkids! Italy. (2023, September 19).

<https://italy.cleancitiescampaign.org/streetsforkids/>

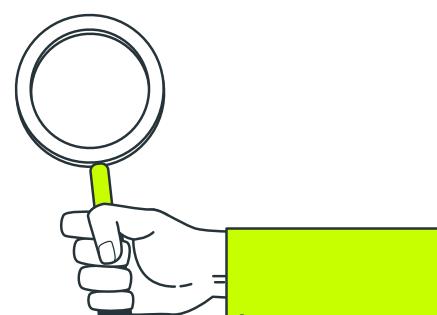
Park, R. E., Burgess, E. W., & McKenzie, R. D. (1968). The city. University of Chicago Press.

Pizzorno, A., Park, R. E., Burgess, E. W., McKenzie, R. D., & De_Palma, A. (1967). La Città. Edizioni di Comunità.

Rissotto, A., & Tonucci, F. (2002). Freedom of movement and environmental knowledge in elementary school children. Journal of Environmental Psychology, 22 (1-2).

StreetfilmsVlog. (2010, December 15). Revisiting Donald Appleyard's Livable Streets. YouTube.

<https://www.youtube.com/watch?v=ESgkcFbGiL8>



Tonucci, F. (1999). *La Città dei Bambini*. Laterza.

Tonucci, F., & Natalini, P. (2019). *A scuola ci andiamo da soli: L'autonomia di Movimento dei Bambini*. Zeroseiup.

Vitale, A. (2007). *Sociology of Community*. Carocci.

Whyte, W. H. (2018). *The social life of small urban spaces*. Project for Public Spaces.

MODULE 4: Tree Friends

Go Smart Bricks. (2021, June 21). *Urban heat island*.

<https://gosmartbricks.com/urban-heat-island/>

Smart Cities Dive. (n.d.). *Why We Need Trees in Our Cities*.

<https://www.smartcitiesdive.com/ex/sustainablecitiescollective/why-we-need-trees-our-cities/1100050/>

World Economic Forum. (n.d.). *Four reasons why cities need a healthy tree cover*.

<https://www.weforum.org/agenda/2022/06/cities-urban-trees-climate-change/>

MODULE 5: Animal Neighbours

Buglife. (2022, October 20). *Gardening for bugs*.

<https://www.buglife.org.uk/campaigns/no-insectinction/room-for-insects-to-thrive/insect-havens-in-towns-and-cities/>

DwightCooper, & Smith, J. (2021, March 19). *Insects in the city - encouraging wildlife into towns & cities*. The Wise House.

https://www.thewisehouse.co.uk/blog/read_197740/insects-in-the-city-encouraging-wildlife-into-towns-cities.html

Goulson, D., & By. (2022, October 18). *Insect decline: An ecological armageddon*: Heinrich Böll stiftung: Brussels Office - European Union. Heinrich-Böll-Stiftung.

<https://eu.boell.org/en/PesticideAtlas-insect-decline>

Guardian. (2019b, February 10). *Plummeting insect numbers "threaten collapse of nature."*

<https://www.theguardian.com/environment/2019/feb/10/plummeting-insect-numbers-threaten-collapse-of-nature>

MODULE 6: City for all Senses

National Wildlife Federation. (n.d.). *Biodiversity*.

<https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Biodiversity>

UNICEF Office of Global Insight & Policy. (2020, November 12). *Why biodiversity is important for children*. <https://www.unicef.org/globalinsight/stories/why-biodiversity-important-children>

