CircularCityChallenge

CREATING A NEXT-GENERATION PARTICIPATORY CONTEST FOR YOUNG PEOPLE
TO INTEGRATE CIRCULARITY INTO SCHOOL CURRICULA

Deliverable D3.3

Instruction sheet & toolkits

Project

Acronym:	**CircularCityChallenge**
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CircularCityChallenge

Deliverable

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1. Introduction

The CircularCityChallenge Project aims to develop a competition-based approach and concept to provide young people aged 14-18 with learning/participation opportunities about circular systems and nature-based sustainability solutions in urban environments. The overall goal of the CircularCityChallenge Project is to create new and improved educational methods to be utilized in upper secondary schools about circularity and sustainability more broadly. Within the scope of the development of the competition concept, the CircularCityChallenge Project will develop new curricula tools that contribute to the overall objective.

This deliverable contains the instructions and a set of toolkits for the CircularCityChallenge contest. The instructions are divided into sections for young people/participants **(Section #2 – the logbook)** and teachers/facilitators **(Section #3 – the guidebook)** and will be formatted for online use with the CircularCityChallenge Platform. The logbook and guidebook will also be presented in pdf format that can be downloaded into mobile technologies to be used digitally and printed and folded into a booklet to be used manually.

As represented here, the toolkit **(Section #4 – the toolkits)** consists of curating existing resources to be used by young people/participants and teachers/facilitators at each step of the contest, as indicated in the logbook and guidebook. Both instructions and toolkit are living documents that will be further adapted according to the requirement and affordances/choice architecture of the CircularCity Challenge Platform **(Deliverable 4.1)**.

The instructions and toolkit were compiled on the basis of background research carried out in WP2 of the project. This included a systematic literature review of relevant scientific literature on Education for Sustainable Development (ESD), ESD Pedagogy, and Urban Circular Development (Circular Cities), as well as literature on involving young people in participatory processes; expert interviews carried out by all members of the consortium; and research into existing curricula, educational tools, methods, and resources. The basic outline and value embedding of the instructions were developed at a face-to-face consortium workshop in March 2023. The instructions also adhere to the ethical framework of value-sensitive design **(see deliverable 1.2)**, in short, adhering to teenage-friendly language, freeing from adult bias about young people, and valuing the participation and agency of young people.

The instructions and toolkit format were reviewed at a meeting of consortium partners in April 2023 and then with external stakeholders in early May 2023. Feedback will be considered in the further stages of formatting for the CircularCityChallenge online platform.

2. The Logbook

The logbook is designed to assist participants/young people in working on their projects. It is divided into six color-coded steps **(Table 1)**, and each step lies on two pages divided into five sections **(Image 1)** that are explained below:

1. **Reminders:** Before starting the step, the logbook provides reminders to ensure participants /young people are well-prepared for the step.

2. **Tasks and Questions:** This section contains tasks and questions related to the step.

3. **Inspirational Material:** The QR code provides access to further knowledge and the toolkit provided online.

4. **Blank Space:** This space is for notes and sketches. There are also more blank pages at the end of the logbook if needed.

5. **Reminders:** After completing the step, the logbook provides reminders to ensure participants/young people have finished it completely.
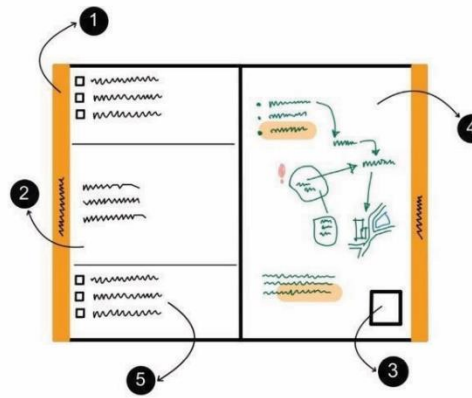
Image 1: Logbook layout
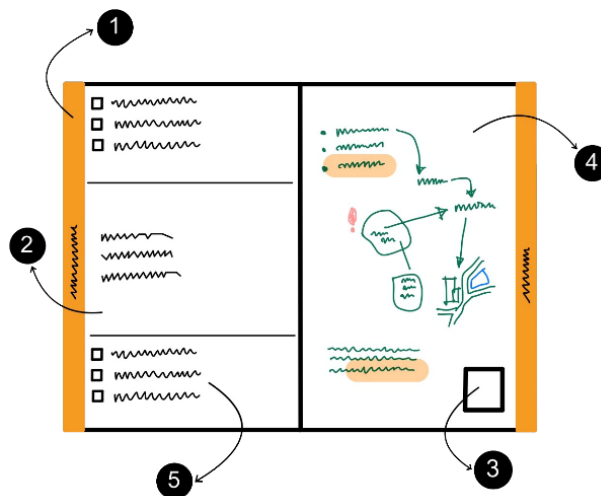
Table 1: Challenge steps and color-codes
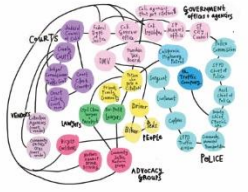
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| P 1 | INTRO - INFORMATION FOR PARTICIPANTS | GUIDELINES ON HOW TO USE THE LOGBOOK FOR PARTICIPANTS | P 2 |

STEP #0 - INTRODUCTION

CHALLENGE YOURSELF; CHALLENGE YOUR CITY!

"We stand now where two roads diverge. [...], they are not equally fair. The road we have long been traveling is deceptively easy, a smooth superhighway on which we progress with great speed, but at its end lies disaster. The other fork of the road –the one less traveled by– offers our last, our only chance to reach a destination that assures the preservation of the earth."

Rachel Carson, Silent Spring, 1962

Highway or the other way?

"Back in the day, our ancestors lived in harmony with nature and learned how to survive by passing down knowledge from generation to generation. They only took what they needed to survive and move forward. But now, after many years, our population is growing super-fast, and we're taking up more space on the planet. We're living longer and expecting more from the world. As Rachel Carson, a marine biologist and environmentalist, once said, we need to change our direction and find new, sustainable lifestyles to keep our planet healthy.

Have you heard about 'urban circularity'?

If you're interested in finding new ways to live sustainably and help our planet, then you'll love urban circularity! It's a cool new way of living sustainably in the city. Basically, in an urban circular system, we reuse the materials and resources of a city over and over again in different ways. We try not to waste anything, so there's very little that we throw away in our homes or cities. It might sound a bit idealistic, but think about how nature doesn't produce any waste at all. We –humans, can learn a lot from nature, even though we're the dominant species on the planet.

CircularCityChallenge

Why do I participate?

The #CircularCityChallenge is an excellent opportunity for teenagers between the ages of 14 and 18 to have a say in critical decisions that will shape the future of their urban communities. This challenge empowers young people like you to contribute to making the world a better place by proposing innovative and sustainable solutions that support a circular way of living. We urge you to identify the root causes of issues arising from climate change and social inequality and suggest sustainable ways to solve them using circular thinking.

Ready to think circular?

Circular thinking is a fresh perspective that has found its way into cities all across Europe, including Amsterdam and Barcelona. By adopting this approach, communities can tackle pressing issues such as pollution, climate change, and ecosystem destruction caused by the mismanagement of resources like food, energy, and consumer goods. There are six key actions that represent the core of circular thinking, which can be used to make cities more sustainable, more livable, more inclusive, and more future-proof.

STEP #0 - INTRODUCTION

| P 3 | INTRO - INFORMATION FOR PARTICIPANTS | INTRO - INFORMATION FOR PARTICIPANTS | P 4 |

STEP #0 - INTRODUCTION

These six actions are explained below:

LOOPING: This involves recycling, reusing, reducing waste, and repairing things instead of throwing them away. By adopting this approach, communities can reduce waste and conserve resources. You may know that communities can reduce waste and save resources by setting up recycling programs and encouraging residents to recycle materials such as paper, plastic, glass, and metal.

REGENERATION: This means creating green spaces, like rooftop gardens and urban farms, to help the environment and make cities healthier. By designing and implementing green spaces, communities can improve air quality, reduce noise pollution, and improve mental health.

ADAPTATION: This is about designing cities that are flexible and adaptable to changes without wasting resources. By designing adaptable cities, communities can reduce the waste generated by demolishing and rebuilding infrastructure.

LOCALIZATION: This means supporting local businesses and working together to create a more sustainable community. By supporting local businesses, communities can reduce their carbon footprint by avoiding transporting goods from faraway places.

SUBSTITUTION: This is about finding alternatives to things that harm the environment, such as using renewable energy instead of fossil fuels. By reducing the use of fossil fuels, communities can contribute to reducing greenhouse gas emissions and combating climate change.

SHARING: This involves sharing resources like cars and bikes to reduce waste and make life easier for everyone. By encouraging resource sharing, communities can reduce the waste generated by consumer goods.

Will you contribute to designing the road that assures the preservation of the earth?

Just keep in mind that designing a circular future is pretty complex and requires interconnected solutions. We have to think about how our choices and actions impact the entire world and work together as communities to make a difference. It's all about taking the initiative and experimenting together to redesign our city systems for the benefit of everyone and create a better future!

So, are you on board with us in experimenting with urban circularity?
Great! Then get started with STEP #1!

HOW TO USE THE LOGBOOK?

A logbook is a record-keeping tool that helps individuals keep track of their activities, events, or observations. It is commonly used in various fields, such as science, to document critical information. A logbook serves as evidence of the work done and is helpful in disputes, investigations, or audits. This logbook is specially designed to help you prepare for the #CircularCityChallenge submission. Utilizing the logbook lets you keep track of your ideas and receive structured step-by-step guidance towards the submission process for the #CircularCityChallenge.

As you can see from the image below, there are five sections in each step, which are marked with different colors on the left and right edges. Each step lies on two pages with those five sections.

Here's more information about each section:

1. First, check the reminders before starting the step to ensure you're well-prepared.
2. Then, you'll find instructions and questions to answer for the task. Discuss these with your teammates.
3. Need some inspiration? Scan the QR code in the bottom right for some inspiration and further information.
4. If you come up with some brilliant ideas during your team discussion, note them down in the blank space reserved for each step. If you need more space, there's extra at the end of the logbook.
5. Finally, check off the reminders to make sure you completed the step. If you did, congratulations! You finished one of the steps!"

STEP #0 - INTRODUCTION

CircularCityChallenge

P 5	IDENTIFY - INFORMATION FOR <u>PARTICIPANTS</u>	FREE SPACE + INSPO FOR <u>PARTICIPANTS</u>	P 6

BEFORE STEP #1, PLEASE CHECK THE FOLLOWING:

☐ Formed a team.

☐ Found a name for our team.

☐ Got our markers, post-its, and critical thinking ready!

IDENTIFY YOUR CHALLENGE

When you think of your everyday life, your city, your neighborhood, or your school:

- Where are resources being wasted?

- Where do you encounter waste?

- Do you see harmful practices causing climate change issues?

- What bothers you the most?

- What would you like to change if you could?

Try to define your challenge in the form of a what-if question, like in the example below!

EXAMPLE: We are bothered by the fact that we are served plastic-wrapped apples in the school canteen. Plastic packaging is used for some reason, yet unknown to us. We will delve into that topic later, but first, we ask, "What if the school canteen did not prefer buying plastic-wrapped apples?" For starters, this would contribute to decreasing plastic pollution and much more...

BEFORE STEP #2, PLEASE CHECK THE FOLLOWING:

☐ Responded to the questions above.

☐ Identified the problem that bothers us most in our city, neighborhood, or school.

☐ Noted/sketched our ideas on this logbook.

☐ Got further information and inspiration from the project website by scanning the QR code.

NOTES/SKETCHES

FOR INSPIRATION

STEP #1 – IDENTIFY YOUR CHALLENGE

CircularCityChallenge

P 7	POSITIONING - INFORMATION FOR PARTICIPANTS	FREE SPACE + INSPO FOR PARTICIPANTS	P 8

STEP #2 – POSITION YOURSELF

BEFORE STEP #2, PLEASE CHECK THE FOLLOWING:

☐ Reflected on our experience in the previous step.

☐ Googled keywords such as "**systems map**," "**stakeholder mapping**," and "**actor mapping**."

☐ Got our markers, post-its, and system thinking ready!

FIND YOUR IMPACT

To figure out where you can make a difference, think about the whole system related to your challenge. Let's try to map this system that will potentially look like the map at the bottom of the next page by asking questions like: Why does this waste exist? Who makes it? Why?

- Write down every person or group involved in the system (teachers, local businesses, non-profits, decision-makers, students, citizens, yourselves). Think beyond the obvious players - you might be surprised. For example: social media influencers, local news reporters, informal neighbourhood groups, climate organisations, various city departments, etc.
- Explore further about defined actors' and groups' needs, values, challenges, and what they think could be changed.
- What are the goals, rules, and values of each person or group? Draw lines between them to see how they're connected.
- Who has the most influence on the process? Who can make a difference? Where is the energy in the system, and where are the problems?
- Where are you standing in this system, and where can you make the biggest impact? Circle that part of the system because this is where you make the impact.

BEFORE STEP #3, PLEASE CHECK THE FOLLOWING:

☐ Responded to the questions and tasks above.

☐ Created our system mapping that includes related actors.

☐ Identified our position of where we can make the biggest impact in our system map.

☐ Got further information and inspiration from the project website by scanning the QR code.

NOTES/SKETCHES

Stakeholder Map for the Traffic Citation System

FOR INSPIRATION

STEP #2 – POSITION YOURSELF

P 9	ENVISION - INFORMATION FOR PARTICIPANTS	FREE SPACE + INSPO FOR PARTICIPANTS	P 10

STEP #3 – ENVISION CIRCULAR FUTURES

BEFORE STEP #3, PLEASE CHECK THE FOLLOWING:

☐ Reflected on our experience in the previous step.

☐ Had a short discussion about what networking skills are.

☐ Got our markers, post-its, pluralistic thinking, and networking skills ready!

ENVISION CIRCULAR FUTURES TOGETHER

Find a better way! Rewrite the rules! Reshape your system!

In your area of impact, imagine if this new system would eliminate waste, circulate products and materials, and regenerate nature. Pick one idea that has potential societal, environmental, and/or economic impact that is easy to implement or that you are passionate about.

- Where is the change possible, and how?
- Who can help you with your new system?
- Who are the right people to bring to the table to realize the desired change?
- Is there someone who would need to be involved?
- Where are the needed relationships to be built?

Connect with key people, your neighbour, school headmaster, local municipality, local entrepreneur, chemistry or geography, math teacher, or all.

Talk to at least one person/group involved in the system. Create an open discussion with the key people you defined, explain your circular vision, and ask for their feedback.

BEFORE STEP #4, PLEASE CHECK THE FOLLOWING:

☐ Responded to the questions and tasks above.

☐ Defined key people in our impact area that could help us reshape the system.

☐ Contacted/Asked for feedback from key people.

☐ Got further information and inspiration from the project website by scanning the QR code.

NOTES/SKETCHES

STEP #3 – ENVISION CIRCULAR FUTURES

FOR INSPIRATION

P 11	CREATE - INFORMATION FOR PARTICIPANTS	FREE SPACE + INSPO FOR PARTICIPANTS	P 12

BEFORE STEP #4, PLEASE CHECK THE FOLLOWING:

☐ Reflected on our experience in the previous step.

☐ Had a short discussion about our presentation skills; PowerPoint? Video? Reporting? Poster? Coding?

☐ Got our markers, post-its, digital tools, and creative thinking ready!

DEVELOPING YOUR INTERVENTION

Design and test your circular idea!

Sketch your idea in more detail. How do you want to share your idea with the world?

You can:

- **Demonstrate (Action-based Presentation)** your solution as a real-world project. For example, build a prototype, perform a campaign, program an app, and many more.

- **Scenario (Plan-based Presentation)** your solution as a proposal for action. For instance, design a product, sketch an alternative production process, design a political measure, formulate a law, and many more.

Reflect on the outcome:

- Did you use the circular action(s) introduced in the introduction?

- How would the different parts of the system respond to this change?

- What would the impact be like?

- What needs to happen for your solution to create as much positive impact as possible?

BEFORE STEP #5, PLEASE CHECK THE FOLLOWING:

☐ Responded to the questions and tasks above.

☐ Defined our presentation style and executed the presentation of our circular idea.

☐ Reflected on our circular idea and presentation of it.

☐ Got further information and inspiration from the project website by scanning the QR code.

NOTES/SKETCHES

STEP #4 – DEVELOP YOUR INITIATIVE

FOR INSPIRATION

| P 13 | SUBMIT - INFORMATION FOR PARTICIPANTS | ASSESSMENT CRITERIA REVEALED FOR PARTICIPANTS | P 14 |

BEFORE STEP #5, PLEASE CHECK THE FOLLOWING:

☐ Reflected on our experience in the previous step.

☐ Checked the assessment criteria given on the next page.

☐ Checked the #CircularCityChallenge website for the requirements (information, document size, etc.) to submit our project by scanning the QR code at the bottom right on the next page.

SHARE YOUR IDEA

Tell us your story & submit it!

Keep a video, photo, and/or text journal of your process using the logbook.

Imagine that you did have an impact on the system with your circular idea. Use your logbook materials and tell us a story about how you shifted the system toward making cities more sustainable, more livable, more inclusive, and more future-proof. Do not forget to keep assessment criteria in mind while finalizing your presentation and highlight that you adopt circular action(s).

We accept videos, power points, and text documents. We recommend submitting it in the English language. If that is not possible, feel free to submit it in your native language.

BEFORE CLICKING THE SUBMIT BUTTON, PLEASE CHECK THE FOLLOWING:

☐ Checked that we have responded to the assessment criteria given on the next page and the submission webpage by scanning the QR code at the bottom right on the next page.

☐ Checked that we entered the correct information requested by the submission webpage.

☐ Uploaded our final product (demonstration or scenario) on the submission webpage.

ASSESSMENT CRITERIA

1. 1UNDERSTANDING URBAN CIRCULARITY

How well does the team display a basic understanding of circularity and the circular economy within complex urban systems of production and consumption?

2. UNDERSTANDING INTER-CONNECTIVITY

How well does the team understand of general landscape (key actors, organizations, initiatives), determine who needs to be involved, map the relationships, roles and information flows in the system, identify opportunities to build new relationships, and explore other parts of the system?

3. SEEING OPPORTUNITIES FOR CIRCULARITY

How well does the team represent the problem in their environment and to address this problem, establish objectives through cooperation, and find ways to achieve those objectives via circular actions?

4. CONVINCING THE JURY ABOUT THEIR ANALYSIS AND PROPOSAL

How well does the team present their overall analysis, which includes the problem, actors, cooperation, and their final proposal for the problem they defined?

FOR INSPIRATION

STEP #5 – SUBMIT YOUR IDEA

3. The Guidebook

The #CircularCityChallenge uses a participatory contest to connect young people across communities, nations, languages, and demographic groups and get them thinking. The aim is not to solely find solutions but to get young people thinking, communicating, and planning about how they can make a meaningful contribution in their daily lives to the fight against climate change and environmental degradation. Thinking and acting about circularity in the ways on the opposite page is an important way into this very complex and sometimes anxiety-provoking problem. It is desired here that young people come out of this challenge with a greater sense of agency and empowerment as well as an understanding of these complex and often contentious topics. It is also desired to ensure that students develop transversal twenty-first-century skills that will benefit them across secondary education and beyond by participating in the contest. There are many resources (some of them curated here in Cahpter #4) on the project platform to help participants/young people, teachers, and facilitators understand the concepts of circularity and enhance their knowledge of critical, system, and creative thinking. Everyone is strongly encouraged to read, listen, watch, and use those resources.
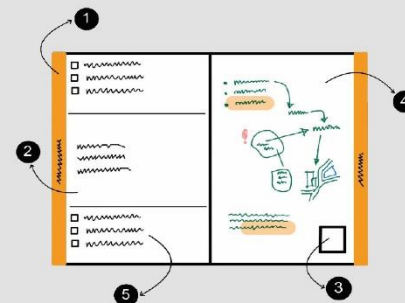
This guidebook is an indispensable tool for teachers and facilitators who want to help their students develop critical, systemic, interdisciplinary, creative, and design thinking skills for the #CircularCityChallenge. The guidebook provides color-coded steps that follow the same order as the participant logbook. Teachers/facilitators can guide their students through the entire project development process by following these steps, marked by a different color.

To simplify teachers'/facilitators' jobs, QR codes at the bottom right of each page lead to more information, inspiring examples, and tools. Whether working alone or collaborating with other teachers and facilitators, this guidebook will provide the information and guidance teachers/facilitators need to help their students.

CircularCityChallenge

P 1	INTRO - INFORMATION FOR FACILITATORS	INTRO - INFORMATION FOR FACILITATORS	P 2

STEP #0 - INTRODUCTION

Dear parents, teachers, and mediators who want to facilitate the #CircularCityChallenge with teenagers,

The #CircularCityChallenge offers teenagers aged 14 to 18 the chance to have a voice in important decisions for the future of their communities. This challenge allows younger generations to contribute to society's transition towards a circular way of living. We hope to inspire participants to identify problems related to climate change and social inequality and propose sustainable solutions through a project-based approach that adopts circular thinking.

Furthermore, 18 million more jobs will result from implementing the Paris Agreement on climate change and shift to a greener economy goal by 2030. 24 million jobs will be created, and 6 million will be lost in this transition. 1.2 billion jobs globally depend on a stable and healthy environment. Currently, there are significant imbalances between the skills offered and the skills needed for this green transition. CircularCityChallenge curricula will give teenagers a view of career opportunities in the green jobs industry and make them more attractive candidates to enroll in related universities and the green jobs industry.

Circular thinking is a novel approach increasingly applied in European cities such as Amsterdam and Barcelona to mitigate issues caused by atmospheric warming, environmental degradation, and ecosystem collapse resulting from unsustainable production and consumption of goods, food, and energy. Circular cities involve experimenting with circular actions, including looping, regeneration, adaptation, localization, substitution, and sharing.

- **LOOPING:** It involves 9R-actions, such as recycle, reuse, recover, reduce, repair, refurbish, remanufacture, repurpose, and refuse of existing products and materials.
- **REGENERATION:** It aims to preserve natural capital and restore the urban ecosystem, which entails implementing permeable surfaces, green roofs, urban farms, and gardens.
- **ADAPTATION:** It aims to plan and design cities in a way that allows for the renewal and adaptation of existing infrastructure with minimal waste of urban resources.
- **LOCALIZATION:** It is concerned with developing local symbiotic capital, promoting collaboration, and encouraging pro-environmental behavior.
- **SUBSTITUTION:** It involves replacing physical resources with virtual ones, non-durable with durable, and non-renewable with renewable resources.
- **SHARING:** It aims to promote waste reduction, co-existence, and public interest in mobility infrastructure through systems like co-housing, co-working, and vehicle sharing, as well as promoting public transportation. This approach also considers space, time, and skill waste reduction, not just material waste.

STEP #0 - INTRODUCTION

The learning approach and learning outcomes

The #CircularCityChallenge is about integrating circularity into curricula at the secondary school level.

The #CircularCityChallenge uses a participatory contest to connect students across communities, nations, languages, and demographic groups and get them thinking. Our aim is not to find solutions but to get young people thinking, communicating, and planning about how they can make a meaningful contribution in their daily lives to the fight against climate change and environmental degradation. Thinking and acting about circularity in the ways on the opposite page is an important way into this very complex and sometimes anxiety-provoking problem. We want young people to come out of this contest with a greater sense of agency and empowerment as well as an understanding of these complex and often contentious topics. We also want to ensure that by participating in the contest, students develop transversal twenty-first-century skills that will benefit them across secondary education and beyond. There are many resources on the project platform to help students, teachers, and facilitators understand the concepts of circularity. We strongly encourage everyone to read, listen, watch, and use those resources. Circularity is a social and economic principle that aims to reduce and eventually eliminate waste in all production and consumption processes. Circularity is a means towards living and producing in a sustainable way that recognizes the finite and delicate nature of our environment. Circularity is also a goal, something to work towards, not necessarily an endpoint that we need to focus exclusively on. All actions that reduce waste are steps in the right direction.

What are the Intended Learning Outcomes of this Challenge?

We have chosen Intended Learning Outcomes (ILOs) based on several sources, including the "Green Competencies" developed by the Joint Research Centre of the European Commission. Upon completing participation in the contest, the participant will:

- Gain a basic understanding of circularity and the circular economy within complex urban production and consumption systems.
- Be empowered with systemic and critical thinking, and encourage them to reflect on how to assess information better and challenge un-sustainability
- Develop competencies related to project management, teamwork and communication, digital information and data literacy, problem-solving, and social responsibility.

CircularCityChallenge

P 3	LEARNING OUTCOMES EXPLAINED				P 4

CircularCityChallenge contest LEARNING OUTCOMES	KNOWLEDGE COMPETENCES	ATTITUDINAL COMPETENCES based on shared values	APTITUDINAL COMPETENCES skills	show progress in the submission materials.
step #1 — understanding urban circularity and seeing opportunities for circularity	finding out about the CIRCLE and understanding that circularity is sustainability WE KNOW: the circle saves natural resources	challenging UN-sustainability and seeing WASTE as a valuable RESOURCE WE VALUE: waste a potential resource	looking around for very concrete and problematic situations of too much linearity WE DO: actively search for issues in my city	we can demonstrate that we found several situations in our community (school community, neighbourhood community, the entire city community...) which are problematic in terms of too much linearity - too much waste
step #2 — in our city where various stakeholders have a role	finding out about circularity requiring collaborations among various stakeholders - mobilisation of multiple actors to correlate activities, behaviours, etc. WE KNOW: circularity is only possible when there are connections among actors to keep resources in their loops	recognizing that there are many stakeholders even if less visible at first, and that paying attention to the relationships among them is essential to understand the context of the issue we want to address WE VALUE: the contributions to circularity could come from each and every one of us in the community	mapping beyond the obvious players with stakeholder analysis methods WE DO: actively identify the stakeholders arpund the selected issue / problematic situation - listing them, reaching them for interviews	we can visualise the results of our stakeholder analysis through tables and diagrams that show the roles and the connections among the stakeholders of the selected issue/problematic situation
step #3 — establishing objectives through cooperation	finding out about defining relevant objectives in strong connection to a shared (agreed upon) assessment of the existing situation WE KNOW: change happens when there is agreement on the set destination and the reasons for choosing that destination are clear to all who are expected to contribute to the change	accepting that change only occurs when stakeholders are convinced about the need and the opportunity for change WE VALUE: aligning visions into a common perspective that results from collaboration, from thinking together about the present and the future	defining relevant objectives in strong connection to a shared (agreed upon) assessment of the existing situation WE DO: actively engaging ourselves and the stakeholders in conversations to get a problem-tree turning into an objective-tree (cause and effect relationships) + SWOT analysis and then focusing on establishing directions for change	we can bring arguments for the chosen directions for change and we can demonstrate that there was collaboration in establishing those objectives
step #4 — and finding ways to reach those objectives	finding out about project management principles and about design thinking approach - the basic theory behind a good action plan WE KNOW: there is a logical approach: in order to reach objectives, we need to find the right actions leading to results - this is called planning and Theory of Change frame can help	aiming at being EFFECTIVE as much impact as possible in short time with limited financial and human resources WE VALUE: creativity seen as innovation with what we have at hand	practicing design thinking going from divergent thinking to convergent thinking and reiterating it until we have a solid plan in design thinking approach participation of stakeholders is embedded WE DO: we plan the actions (verbs) being very precise about the roles (who?) and describing results and a time-frame (duration for each action and the links between them)	we can explain our action plan through which we rewrite the rules of the game that we shall play together
step #5 — then be convincing to anyone about your analysis and proposals	finding out about the tipis and tricks of communicating complex messages WE KNOW: the role of emotions - and the importance of story telling the importance of choosing the right instrument for a specific content to be communicating	creating a work environment which is CONSENSUS ORIENTED and that allows room for all to contribute and be credited for that contribution WE VALUE: team work brings quality to the process that, in turn, brings quality to results	preparing presentation materials WE DO: DEMONSTRATION CAMPAIGN / PROPTYPE **report and illustrate what you did!** SCENARIO FOR ACTION IMPLEMENTED **report "impact" in 10 years from now**	we put together both the LOG BOOK pieces (SELF DOCUMENTING OUR PROCESS) and the visuals + texts + videos + ... (PITCHING OUR RESULTS)

STEP #0 - INTRODUCTION

| P 5 | HOW TO USE THIS GUIDEBOOK FOR FACILITATORS | HOW TO GUIDE PARTICIPANTS IN USING THE LOGBOOK FOR FACILITATORS | P 6 |

STEP #0 - INTRODUCTION

HOW TO USE THE FACILITATOR GUIDEBOOK

This facilitator guidebook is an indispensable tool for teachers and facilitators who want to help their students develop critical, systemic, interdisciplinary, creative, and design thinking skills for the #CircularCityChallenge. The guidebook provides color-coded steps that follow the same order as the participant logbook; more information of which is available below and on the next page. You can guide your students through the entire project development process by following these steps, marked by a different color.

To simplify your job, you'll find QR codes at the bottom right of each page, leading to more information, inspiring examples, and tools. Whether working alone or collaborating with other teachers and facilitators, this guidebook will provide the information and guidance you need to help your students.

HOW TO PREPARE THE LOGBOOK FOR PARTICIPANTS

The participant logbook is an essential tool for keeping track of the progress of your students in the competition. It can be downloaded from the competition website in PDF format. In order to reduce paper usage, we highly recommend encouraging students with access to laptops and tablets to use the digital version of the logbook. While this may not be possible for all participants, we have provided a printing guide that can be easily followed to prepare printed logbooks. The printing guide is accessible by scanning the QR code at the bottom right of the following page.

We understand the importance of reducing waste, which is why we suggest using leftover paper from accidental prints to create logbooks for students. This not only helps to minimize waste but also promotes a culture of sustainability aligning with the aim of the #CircularCityChallenge. By repurposing paper that would otherwise be thrown away, we can give it a second life and conserve resources.

In addition to the above, the participant logbook serves as valuable guidance for students throughout the competition. It allows them to keep track of their progress, reflect on their learning, and organize their thoughts. Using the logbook, students can better track their ideas and make informed decisions about improving them. Overall, the participant logbook is an important tool for promoting student success and engagement in the competition.

HOW TO GUIDE PARTICIPANTS IN USING THE PARTICIPANT LOGBOOK

We strongly suggest that you, as a facilitator, encourage students to use the logbook throughout the submission process. The logbook is designed to assist students in working on their projects. It is divided into five sections for each step, which are marked with different colors on the left and right edges, as shown in the image below:

1. **Reminders:** Before starting the step, the logbook provides reminders to ensure students are well-prepared. It is advised that you go over these checkpoints, which you will also find in your guidebook for each step, with the team members.
2. **Tasks and Questions:** This section contains tasks and related questions. It is advised that you provide space for each team member to ask questions about the task. You will find more information for each task in your guidebook within the pages related to each step.
3. **Inspirational Material:** The QR code provides access to further knowledge. It is advised you encourage students to explore additional information through the link provided in each step via the QR codes. You will also find QR codes at the bottom of the pages of your guidebook to help you address students' potential questions.
4. **Blank Space:** This space is for notes and sketches. It is advised that you encourage students to create mind maps, sketches, and notes for each step on the blank spaces provided for each task. There are also more blank pages at the end of the logbook if needed.
5. **Reminders:** After completing the step, the logbook provides reminders to ensure students have finished it completely. Again, it is advised that you go over these checkpoints, which you will also find in your guidebook for each step, with the team members.

FURTHER INFORMATION

STEP #0 - INTRODUCTION

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CircularCityChallenge

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STEP #1 – IDENTIFY YOUR CHALLENGE

Preparations for the STEP #1

☐ **Help** students form a team by either giving them the initiative to choose their own teammates or grouping them based on their interests. For inspirational examples, scan the QR code on the next page.

☐ **Provide** markers, post-its, and other materials for the team to use during their critical thinking process, and take a look at suggestions on the next page on how to support your students in critical thinking and teamwork.

TASK: IDENTIFY THE CHALLENGE

To support your students in this step, you can:

○ **Remind** them to stay focused on the task and to think critically about the problem they will be trying to solve. Encourage them to ask critical questions in addition to the given task question, such as:
  ● What is the impact of this waste on the environment and human health?
  ● What are the underlying causes of this waste production?
○ **Encourage** them to document their progress and thoughts throughout the step. You can introduce mind-maps, a visual tool used to organize ideas that can be used for brainstorming, note-taking, and organizing complex information. To make a mind map, follow these steps:
  ● Start with a central idea or topic and draw a circle around it.
  ● Draw branches radiating out from the center circle, each representing a subtopic or related idea.
  ● Continue to add more branches and subtopics, using colors and images to help organize and clarify your thoughts.

Preparation for the next step –> STEP #2

☐ **Check in** with the students to ensure that they followed the given instructions for the task.

☐ (Optional) **Encourage** students to present their identified challenges in an elevator pitch, which is a brief, persuasive speech used to spark interest in others about their idea. It should be short enough to be delivered in the time span of an elevator ride, typically 30 seconds to 2 minutes. The goal is to get the listener interested in learning more about the idea. It should be clear, concise, and easy to understand.

SUPPORTING STUDENTS IN CRITICAL THINKING and TEAMWORK

Encourage team building: At the beginning of the project, allow time for students to get to know each other and establish a team dynamic. You can facilitate team-building exercises, such as icebreakers, trust-building activities, or games that require cooperation and communication.

Establish clear expectations: Clearly communicate the goals of the project, the roles and responsibilities of each team member, and the criteria for participation and success. It is important to encourage students to share their motivation for participating in the #CircularCityChallenge. Also, encourage them to ask questions and seek clarification to ensure they understand the expectations.

Foster critical thinking: Provide opportunities for students to analyze and evaluate information, develop hypotheses, and make evidence-based arguments. Encourage students to ask questions and consider multiple perspectives when making decisions.

Encourage collaboration: Emphasize the importance of collaboration and communication within the team. Encourage students to share their ideas and listen actively to their teammates' ideas. Teach them how to give and receive feedback constructively.

Provide guidance and support: As the project progresses, be available to answer questions and provide guidance. Monitor each team's progress and offer feedback to help them stay on track and meet their goals.

Encourage reflection: At the end of each step of their project, encourage students to reflect on their experience. Ask them to evaluate their own contributions to the team and identify what they learned. Use this feedback to improve their experience not only in future steps and also in future projects.

FURTHER INFORMATION

STEP #1 – IDENTIFY YOUR CHALLENGE

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STEP #2 – POSITION YOURSELF

Preparations for the STEP #2

☐ **Encourage** students to reflect on their experience. Ask them to evaluate their own contributions to the team and identify what they learned. This will help you track their motivation and identify challenges where you can provide further support.

☐ **Provide** visuals or encourage them to search for visuals of actor/stakeholder or system mapping, and take a look at suggestions on the next page on how to support your students in system thinking and actor mapping.

TASK: FIND YOUR IMPACT

To support your students in this step, you can encourage them to think out of the box:

o **Challenge** them to think broadly and creatively. Some obvious actors might include the students themselves, local businesses, non-profit organizations, decision-makers, and citizens. But many more individuals or groups could be involved in the system than just these obvious actors. Encourage students to think about who might be affected by the waste, who might be contributing to it, and who might have a role to play in reducing it.

o **Encourage** them to categorize defined actors based on the power and information they hold in taking action and their relationship to their defined challenge and to identify connections and relationships between these groups. By doing so, students can start to get a more complete picture of the system and understand how different players are connected and interdependent.

Discuss together any key insights that have emerged and encourage your students to reflect on what they have learned.

Preparation for the next step –> STEP #3

☐ **Check in** with the students to ensure that they followed the given instructions for the task.

☐ (Optional) **Encourage** students to present their system mapping as a poster and create an exhibition for their peers, teachers, and managers. This will raise awareness about the systems around us, which are at the core of sustainability issues.

SUPPORTING STUDENTS IN SYSTEM THINKING & ACTOR MAPPING

System thinking is a powerful skill that can help students understand how different parts of a system interact with each other and how they can work together for meaningful environmental action. This skill will help students to become better problem solvers, critical thinkers, and decision-makers. Mapping out systems can help your students identify opportunities for change. When visualizing systems related to the circular economy, common elements include **actors**, **activities and events**, **resources and information**, **policies and incentive structures**, and the **relationships** between them. All elements need to be viewed in the context of the whole city.

ACTORS: Ask your students to identify the actors involved with or impacted by their defined challenge. This includes individuals, groups, organizations, and any other relevant entities. Have students come together as a team and look at all the people they've identified so far. Are there any overlaps? Did they miss anyone? Make sure they document all stakeholders.

ACTIVITIES & EVENTS: Challenge them to identify initiatives that provide platforms, such as public forums, citizen councils, and elections, for the defined actors to interact with each other.

RESOURCES & INFORMATION: Encourage them to identify each actor's and group's resources and information that might be relevant to their defined challenge.

POLICIES & INCENTIVE STRUCTURES: Encourage them to rank the defined actors based on the power they hold for taking action to solve the challenge. Challenge them to think from a bottom-up approach, giving credit to citizens for holding the power of action.

RELATIONSHIPS: Guide your students to draw lines with arrows connecting the stakeholders. They should describe the relationships between them. Encourage your students to cluster, circle, and label related groupings. They can also draw arrows between the clusters to describe relationships between groups. Encourage your students to identify any emerging themes. Who stands out? What relationships stand out?

FURTHER INFORMATION

STEP #2 – POSITION YOURSELF

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Preparations for the STEP #3

☐ **Encourage** students to reflect on their experience. Ask them to evaluate their own contributions to the team and identify what they learned. This will help you track their motivation and identify challenges where you can provide further support.

☐ **Introduce** the concept of pluriform society to your students and take a look at suggestions on the next page on how to support your students in pluralistic thinking and networking.

TASK: ENVISION CIRCULAR FUTURES TOGETHER

To support your students in this step, you can:

○ **Facilitate** group discussions where students can share their ideas and receive feedback from their peers. This will not only help them refine their ideas but also develop their pluralistic thinking and communication skills.

○ **Encourage** students to conduct research on the societal, environmental, economic, and ecological dimensions of sustainable development. This will help them better understand the complex issues they are addressing.

○ **Invite** community leaders or representatives from local organizations to speak to your students about their work in sustainable or circular development. This will give students the opportunity to learn from experts and ask questions about real-world challenges and solutions.

○ **Encourage** students to reflect on their experiences and the feedback they received from key actors. Ask them to think critically about how they can use this feedback to refine their ideas and overcome any potential challenges or obstacles.

Preparation for the next step –> STEP #4

☐ **Check in** with the students to ensure that they followed the given instructions for the task.

☐ (Optional) **Organize** a networking event and invite local individuals, such as people from the neighborhood, the school headmaster, the local municipality, local entrepreneurs, influencers, and community leaders interested in a circular approach. This event can help your students enhance their networking skills and provide additional opportunities to receive feedback on their ideas.

SUPPORTING STUDENTS IN PLURALISTIC THINKING & NETWORKING

The pluralistic approach allows learners to understand different perspectives, views, and values from the individual, community, and non-human levels and enables them to acquire pluralistic thinking and networking skills. The pluriform society is built on the pluralistic approach and potentially explains the interconnectedness of systems in cities. This approach furthers the concepts of active citizenship and inclusive pluralism, which require democratic exchanges of ideas, evaluation of various perspectives, and deliberative communication to establish collective values and norms.

Explain to your students that sustainable development requires a comprehensive understanding of complex systems (societal, environmental, economic, and ecological) that operate at different levels, from individual to community and non-human.

Encourage students to explore different perspectives, views, and values to acquire pluralistic thinking skills. This can be done by challenging them to approach key actors they defined in their impact area to receive feedback on their idea.

Encourage your students to engage in arguments, collaborate with others, and explore their contributions.

Introduce the skills needed for networking, such as communicating effectively, both verbally and in writing, strong interpersonal skills, having confidence in oneself, and finding creative ways to connect with people and stand out from the crowd.

Remind your students that lack of collaboration between actors or disciplines weakens the distribution of benefits and results in broken or separate insight acquisition from one subject or discipline perspective.

FURTHER INFORMATION

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STEP #4 – DEVELOP YOUR INITIATIVE

Preparations for the STEP #4

☐ **Encourage** students to reflect on their experience. Ask them to evaluate their own contributions to the team and identify what they learned. This will help you track their motivation and identify challenges where you can provide further support.

☐ **Introduce** different presentation tools and styles and take a look at suggestions on the next page on how to support your students in creative thinking.

TASK: DEVELOP YOUR INTERVENTION

To support your students in this step, you can:

- ○ **Encourage** students to brainstorm their ideas. Once students have generated a range of ideas, they can choose one circular idea that they are passionate about and that aligns with the task requirements. The idea should be feasible or something that they can realistically achieve to either demonstrate or create a scenario.
- ○ **Encourage** students to sketch their idea in detail. After selecting their idea, students can sketch it in more detail, mapping out the key steps, stakeholders, and outcomes. You can provide feedback and guidance on refining their idea, making it more impactful, and considering the potential consequences.
- ○ **Guide** students to choose a presentation style. You can encourage students to think creatively and choose a style that suits their idea.
- ○ **Encourage** students to reflect on the outcome. You can guide students to evaluate how they used the circular action(s), the response of the different parts of the system, the impact of their solution, and identify what needs to happen to create the most positive impact possible.

Preparation for the next step –> STEP #5

☐ **Check in** with the students to ensure that they followed the given instructions for the task.

☐ (Optional) **Encourage** students to present their circular idea in an elevator pitch, which is a brief, persuasive speech used to spark interest in others about their idea. It should be short enough to be delivered in the time span of an elevator ride, typically 30 seconds to 2 minutes. The goal is to get the listener interested in learning more about the idea. It should be clear, concise, and easy to understand.

SUPPORTING STUDENTS IN CREATIVE THINKING

An **action-based presentation** is a type of presentation that involves demonstrating a solution as a real-world project. This can be done in many different ways, depending on the nature of the project and the resources available. Here are a few examples of action-based presentations:

- ○ **Performing a Campaign:** If your solution involves changing people's behavior or raising awareness about an issue, you can create a campaign to promote your solution. This can include creating a social media campaign, organizing an event, or producing a video that showcases your idea.
- ○ **Building a Prototype:** If your solution involves a physical product, you can build a prototype to demonstrate how it works. This can involve creating a mock-up using cardboard, 3D printing a model, or producing a functional prototype that can be tested and evaluated.

Plan-based presentation is a method of presenting a proposed solution as a concrete plan of action. This presentation format is commonly used in project management, business, and policy-making contexts. A plan-based presentation aims to convince the audience that the proposed solution is practical, feasible, and effective. It involves presenting timelines, budgets, and resource requirements and any potential challenges

Create a conducive environment for creative thinking: Create an environment that fosters creative thinking by encouraging students to explore new ideas, experiment, and take risks without fear of judgment. They can do this by praising effort rather than just results, allowing for open dialogue, and celebrating diverse perspectives.

Introduce creative thinking techniques: such as brainstorming, mind mapping, visualization, and role-playing, to help students generate and explore new ideas. Using these techniques, students can learn to approach problems from different angles and discover new solutions.

Encourage curiosity and questioning: Encourage students to ask questions, challenge assumptions, and seek new information—prompt students to think critically by asking open-ended questions and encouraging them to explore diverse perspectives.

Foster collaboration and experimentation: Collaboration and experimentation are key elements of creative thinking.

FURTHER INFORMATION

P 15	SUBMIT - INFORMATION FOR FACILITATORS	SUBMIT - INFORMATION FOR FACILITATORS	P 16

STEP #5 – SUBMIT YOUR IDEA

Preparations for the STEP #5

☐ **Remind** students to check the #CircularCityChallenge website for the requirements (information, document size, etc.) to submit their projects

☐ (if needed, based on the questions from your students) **Explain** the assessment criteria explained on the next page before submitting their projects. The submission page can be accessed by scanning the QR code at the bottom right on the next page.

TASK: SHARE YOUR IDEA

To support your students in this step, you can:

- **Encourage** students to be proactive and communicate with each other about their roles in the submission process.
- **Offer help** to students if they experience a challenge during the submission process.
- **Remind** students that previous steps can be repeated; engaging actors and internet research can be done whenever needed to adapt and refine their idea. It is normal to hit barriers and the need to adapt an idea.

Preparation for the #CircularCityChallenge submission:

☐ **Check in** with the students to ensure that they followed the instructions, entered the correct information requested by the submission webpage, and uploaded the final product (demonstration or scenario) on the submission webpage.

ASSESSMENT CRITERIA

1. UNDERSTANDING URBAN CIRCULARITY

How well does the team display a basic understanding of circularity and the circular economy within complex urban systems of production and consumption?

2. UNDERSTANDING INTER-CONNECTIVITY

How well does the team understand of general landscape (key actors, organizations, initiatives), determine who needs to be involved, map the relationships, roles and information flows in the system, identify opportunities to build new relationships, and explore other parts of the system?

3. SEEING OPPORTUNITIES FOR CIRCULARITY

How well does the team represent the problem in their environment and to address this problem, establish objectives through cooperation, and find ways to achieve those objectives via circular actions?

4. CONVINCING THE JURY ABOUT THEIR ANALYSIS AND PROPOSAL

How well does the team present their overall analysis, which includes the problem, actors, cooperation, and their final proposal for the problem they defined?

FURTHER INFORMATION

STEP #5 – SUBMIT YOUR IDEA

4. ToolBox Collection

STEP #0 – CIRCULARITY

Name of resource	Type of resource	User group	Link or file
Ellen MacArthur on the basics of the circular economy	You Tube Video	All	https://www.youtube.com/watch?v=NBEvJwTxs4w
GreenComp The European sustainability competence framework	JRC Report	Facilitators	https://publications.jrc.ec.europa.eu/repository/handle/JRC128040
Ellen MacArthur foundation		All	https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview
The Impossibilities of the Circular Economy: Separating Aspirations from Reality	Comic	All	https://360dialogues.com/360portfolios/ce-impossibilities
Knowledge Hub Circular Cities	website	All	https://knowledge-hub.circle-lab.com/cities
Amsterdam Circulair	website	All	https://www.amsterdam.nl/bestuur-organisatie/volg-beleid/coalitieakkoord-uitvoeringsagenda/gezonde-duurzame-stad/amsterdam-circulair-2020-2025/
Circular Eelisa Community	Infographic	All	https://drive.google.com/file/d/179eREYyEpjWq-JSavl-3lxq0rfsqrNtF/view
The Circular Classroom	workbooks	All	https://circularclassroom.com/
BEE Environmental Communication	videos	All	https://www.youtube.com/watch?v=ZznghwyWE-c
Circular Design Guide	videos, sheets, examples	All	https://www.circulardesignguide.com/resources
Circular Dutch Economy	document	Facilitators	https://www.government.nl/ministries/ministry-of-infrastructure-and-water-management/documents/reports/2021/10/21/updated-circular-economy-implementation-programme-2021-2023-summary
The Urban Bio-Loop	animation	All	https://www.youtube.com/watch?v=ZIAYuN98tI&ab_channel=EllenMacArthurFoundation
Circular City 2030: A Dutch vision of the circular neighborhood of the future	video	All	https://www.youtube.com/watch?v=9WADtrf8SkE

Project involving circularity in the urban environment - Taian Market	website	Participants	https://www.mvrdv.com/projects/391/tainan-market
Circularity in the urban environment - Volontariat Homes for Homes Children	website	Participants	https://archello.com/project/volontariat-homes-for-homeless-children#stories

STEP #1 CRITICAL THINKING

Name of resource	Type of resource	User group	Link or file
Silent Spring	Book	Participants	https://www.bol.com/nl/nl/f/silent-spring/30374095/
The Children of Anthropocene	Book	Participants	https://www.bol.com/nl/nl/p/the-children-of-the-anthropocene/9300000055442395/?c2a=buy#productTitle
SOS: What you can do to reduce climate change	Book	Participants	https://www.amazon.co.uk/SOS-reduce-climate-actions-difference/dp/1529105897
Going circular - a vision for the urban transtion	Article + Video	Participants	https://www.swecogroup.com/urban-insight/climate-action/report-going-circular-a-vision-for-the-urban-transition/

STEP #2 SYSTEM THINKING

Name of resource	Type of resource	User group	Link or file
Step-By-Step Stakeholder Map	website	All	https://www.ibm.com/design/thinking/page/toolkit/activity/stakeholder-map
What is a Systems Map?	website	All	https://www.ideou.com/blogs/inspiration/what-is-a-systems-map
Guide to actor mapping	pdf	All	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.fsg.org/wp-content/uploads/2021/08/Guide-to-Actor-Mapping.pdf
The Circular Classroom	videos	Facilitators	https://circularclassroom.com/educators/
Care Innovations	pdf	Facilitators	https://www.careinnovations.org/wp-content/uploads/Systems-Mapping-Workbook.pdf
BEE Environmental Communication	videos	All	https://www.youtube.com/watch?v=rDxOyJxgJeA

The Omydar Group: Systems TOG	videos	All	https://vimeo.com/togsystems
Sustainable Provocateur UNEP	pdf	All	https://static1.squarespace.com/static/566b4bb 725981d5723ad160b/t/58533195579fb3fa636bb 1e2/1481847224881/SUPERPOWER+3+Systems+ Thinking.pdf
Circular Design Guide	videos	Facilitators	https://www.youtube.com/watch?v=ylujl-ZKdq8
Results for Development	video	All	https://www.youtube.com/watch?v=fXxFz-Tr6Zg

STEP #3 INTERDISCIPLINARY THINKING

Name of resource	Type of resource	User group	Link or file
Solar Decathlon 21/22	website	Facilitators	https://solardecathlon.eu/sde-21-22-programme-release/
Industrial symbiosis in the harbour area of Malmo	article	All	
Urban symbiosis in Malmo	video	All	https://www.youtube.com/watch?v=-xKjZcUb4k0

STEP #4 CREATIVE THINKING

Name of resource	Type of resource	User group	Link or file
Competendo Facilitator Handbooks	Handbook pdf	Facilitators	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https:// www.suedwind.at/fileadmin/user_upload/suedwind/X_ Downloadliste/creativecompetence.pdf
Competendo Facilitator Handbooks	Handbook pdf	Facilitators	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https:// competendo.net/en/hb/stepstowardaction.pdf