

THE CIRCULAR CLASSROOM

MODULE 2

SYSTEMS & SUSTAINABILITY

INTRO

WELCOME TO THE CIRCULAR CLASSROOM WORKBOOK FOR MODULE 2

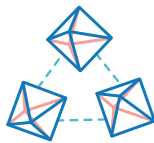
Systems & Sustainability

In this workbook, you will find a general introduction to the core content of this module, along with activities for in-class learning, further research and exploration.

This pack includes three core activities that you can do during class. It also has variations and suggestions for how to extend the learning experience so you can engage in lengthier explorations into the core topics.



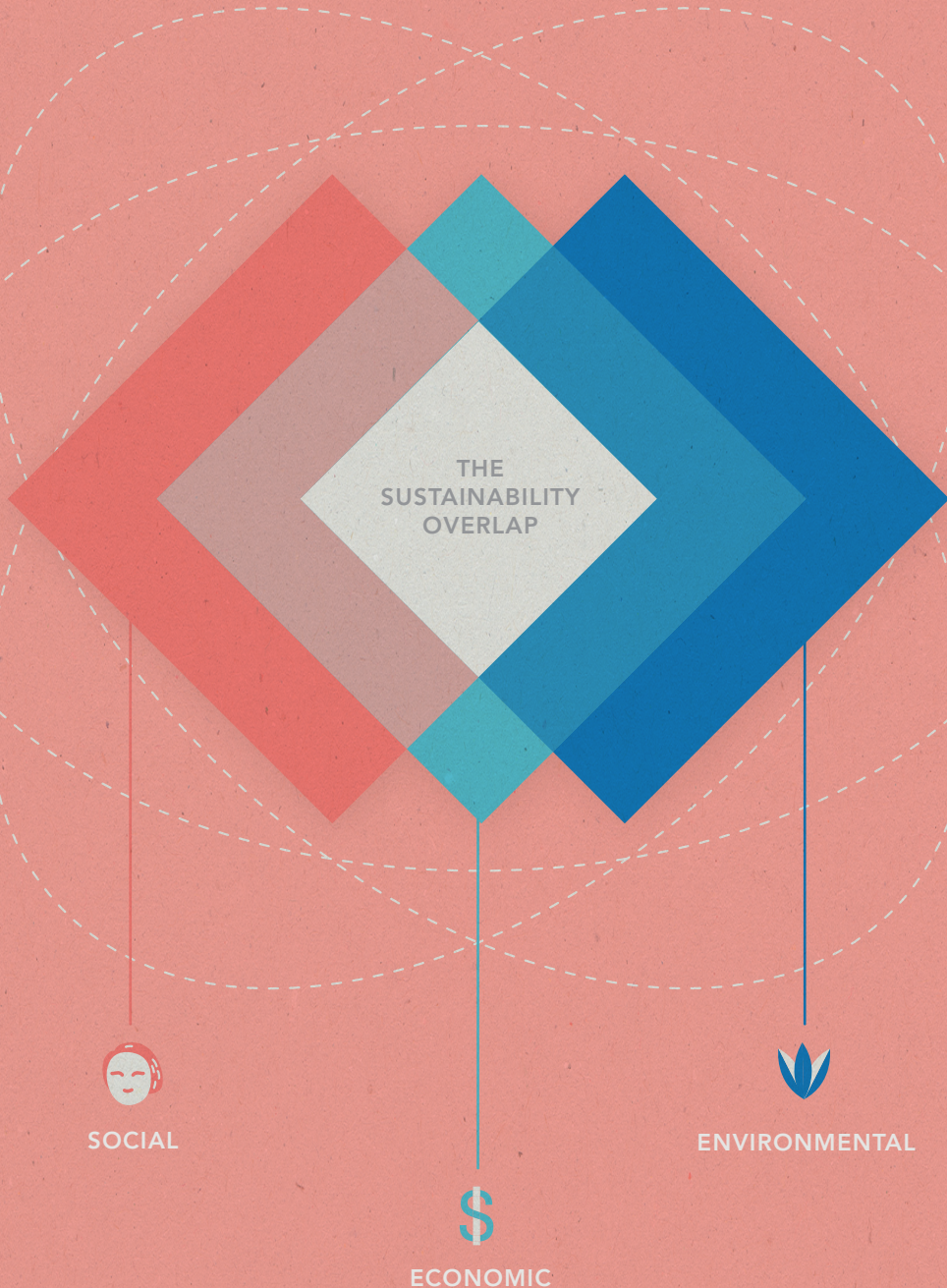
Refer to the website for live links to additional support materials.



Feel free to photocopy this content and use it to activate your classroom.



EVERYTHING IS INTERCONNECTED



SYSTEMS & SUSTAINABILITY

The world is made up of complex interconnected systems of which we human beings are a part.

We have to breathe, eat food and drink fresh water to survive and thrive on this planet. Thus, it is really important that we figure out how to meet our human needs in ways that do not prevent the earth from continuing to be able to provide vital systems for us all, for free!

Sustainability is about meeting the needs of current generations without negatively affecting the ability of future generations to meet their own needs.

Essentially it is about making decisions today that will benefit the future. This requires a different perspective on how the world works. Understanding how the different ecosystems intersect with the industrial and social systems that we are all part of is the fundamental thinking tool for contributing to a sustainable future.

Sustainability is something that applies to all of us! Everything we do has an impact. Some things we do have a bigger impact than others and the choices we make in our daily lives (and eventually as professionals) have the capacity to make a positive or negative impact. That's why learning about systems and sustainability is a critical part of the future economy.

Sustainability is not just about nature, it's about the economic, social and environmental choices we make as individuals, businesses, communities and entire societies.

No human being can opt out of breathing. So everyone has a responsibility and an opportunity to be part of a sustainable future, now.

The circular economy needs more than sustainability – it is about finding ways of protecting the systems that sustain life on earth while also being regenerative and making a positive impact.

ACTIVITY 1

YOUR ECOLOGICAL FOOTPRINT

MATERIALS NEEDED

Internet access
www.footprintcalculator.org

The goal of this activity: Learn the relationship between individual actions and environmental impact. By calculating your ecological footprint, you will discover that many people live beyond the earth's means, which brings us to one of the main goals of sustainability: figuring out how we can all live within the resource limits of the planet that we all share.

STEP 1

Use the footprint calculator to identify the footprint for your country (in class or at home), then obtain a screen grab or printout of the results.

The calculator will ask a series of lifestyle questions and will provide the number of planets needed for everyone to live in the same way.

STEP 2

Knowing the average ecological footprint for Finland: 6.1 global hectares per person. Analyze whether your personal footprint is much higher or lower than the average. Discuss the results with your peers (and ask what their footprint is, too).

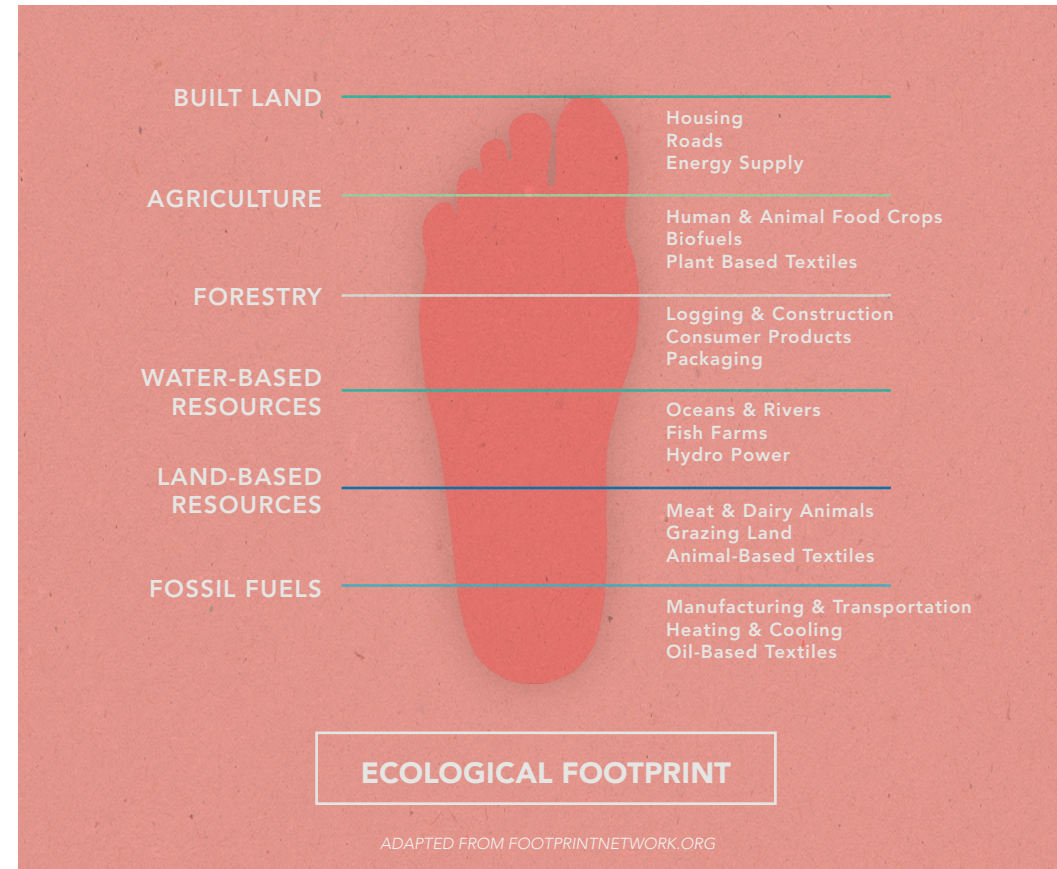
STEP 3

Discuss the greatest impact areas each person has and develop a list of all the different ways you could reduce them.

STEP 4

Recalculate your footprint, this time trying to select options that will result in one planet at the end.

This activity reminds us that our choices make an impact and shows us what we can do to reduce our ecological footprint.



QUESTIONS TO CONSIDER

What immediate actions can you take to reduce your ecological footprint?

How can you help others learn about the impact of their consumption choices?

What actions can you take to reduce your ecological footprint in the long term?

How could your school or community start to take action to reduce their collective ecological footprint?

What countries have the smallest footprint and why?

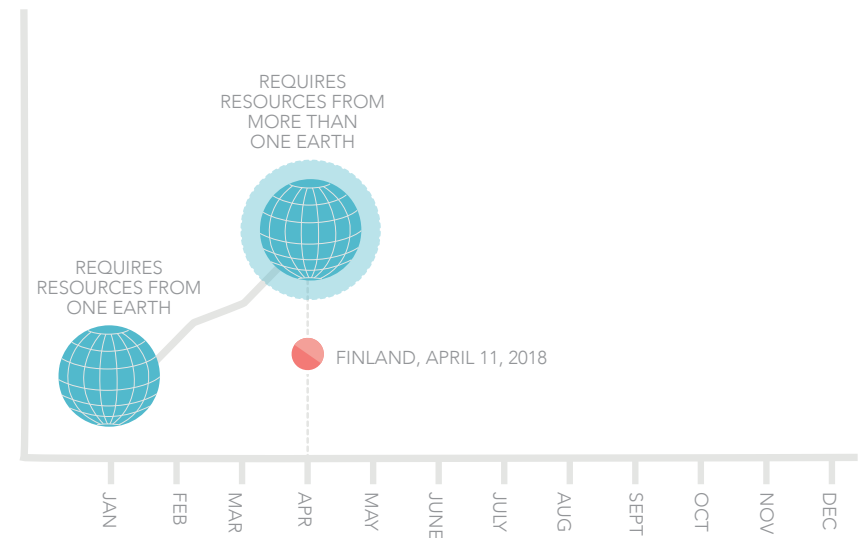
What is the highest and lowest impact of your own actions?

AFTER THE ACTIVITY

Discuss individual and collective actions and the impact they have on natural systems.

Create an individual sustainable consumption action plan based on the new information you now have about the impact of your actions.

What type of school-wide activities could be introduced to reduce the school's footprint? What actions can you and your peers take to help activate this? Challenge yourselves to work together to create an event for global overshoot day. This occurs in Finland on 11 April, 2018.



ACTIVITY 2

SYSTEMS MAPPING

MATERIALS NEEDED

*Lots of coloured markers
Large pieces of scrap paper*

The goal of this activity: Learn to think in systems and understand the relationships between things in the world from social, industrial and ecological systems. This activity allows you to take a quick glimpse into the complexity of systems and gives you the opportunity to see the roles we all play.

STEP 1

Divide yourselves into groups of 3–6 people.

Cluster each group around a table so that you can all stand and write on a large piece of paper.

Every person should have their own marker.

STEP 2

Each group selects a topic – feel free to add any topics that are relevant to your class. Some examples could be:

<i>Ocean plastic</i>	<i>Inequality</i>
<i>Recycling</i>	<i>Ethics</i>
<i>Waste</i>	<i>Agriculture</i>
<i>Energy</i>	<i>Legal system</i>
<i>Education</i>	<i>Consumption</i>

STEP 3

Write the topic in the center of the paper. Start writing all the words that relate to the topic. Everyone should contribute, and they can write words anywhere: upside down, large, small, messy. There are no wrong answers! Everything is eventually interconnected and the page will be beautifully messy.

STEP 4

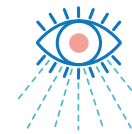
Once the page is full of words, begin exploring relationships by drawing lines between related words, adding new things as needed. The messier the better. This activity is about the exploration rather than the final outcome. This stage will be completed when the page is full of words and lines.

STEP 5

Each group will share what they learned about the topic with the rest of the class. If it helps frame the conversation, you can set a parameter such as “three things you discovered”.

Systems mapping is all about exploring the connections between things and allowing people to freely form relationships and share ideas about why something is the way it is.

As such, the important aspect of this activity is to remember that it is meant to be messy, a bit chaotic and very creative. Part of the outcome is freeing the part of us that wants to categorize the world!



RESOURCES

[Systems mapping article Kumu.io](#)

QUESTIONS TO CONSIDER

How did all the maps differ?
Why?

How would this type of thinking help you make better decisions in life and work?

What did you learn from hearing about the systems explorations of other people?

What other large, important systems are at play in the world?

What surprised you the most about your discoveries?

How did other people's life experiences influence their map making?

AFTER THE ACTIVITY

After sharing, there will be many new insights into the system that was explored. This creates a great opportunity for setting actions for further research.

As you and your peers identify all of the different types of social, industrial and environmental systems in the world, discuss how they interconnect.

A great example is the food system!

You will have discovered that everything is interconnected and that the world is made up of many interdependent and complex systems.

Now that you have begun to explore systems, you can start considering how our actions can sometimes have a negative impact and how you can help change them.

As a follow-up activity, work in small groups to consider ways you could make changes to the systems you explored.



ACTIVITY 3

SUSTAINABLE DEVELOPMENT GOALS

MATERIALS NEEDED

*Brain power!
Enthusiasm
A printout or digital display of the United Nations' Sustainable Development Goals*

The goal of this activity: Connect with the 17 United Nations' Sustainable Development Goals for a sustainable future, identify the causes of the issues and develop potential solutions.



STEP 1

Look at the United Nations' Sustainable Development Goals and review the core concepts of the goals.

STEP 2

Discuss which goal you think is most important and explain why. Explore the universal goals that we share as human beings and ask yourself and your peers to identify which one they connect with the most.

STEP 3

Create small groups of 2-4 people.

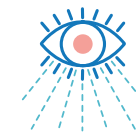
Choose a Sustainable Development Goal to discuss in your group – make sure every group has selected a different goal.

STEP 4

Each group will make a list of all the issues associated with the Sustainable Development Goal that they chose, listing a minimum of 10 issues. You could perhaps research this online, but limit your research time to 15 minutes.

STEP 5

After the group has identified at least ten issues, decide on one of the problems to work on. Each group should develop three potential solutions to the issue they've selected. Limit this step to 10 minutes.



RESOURCES

[United Nations SDGs](#)

QUESTIONS TO CONSIDER

What can I do to help achieve the goal?

How will this goal impact my life in the future if we don't address it?

How are all the goals interconnected?

Whose responsibility is it to make sure these goals are addressed?

How can you put your ideas into action?

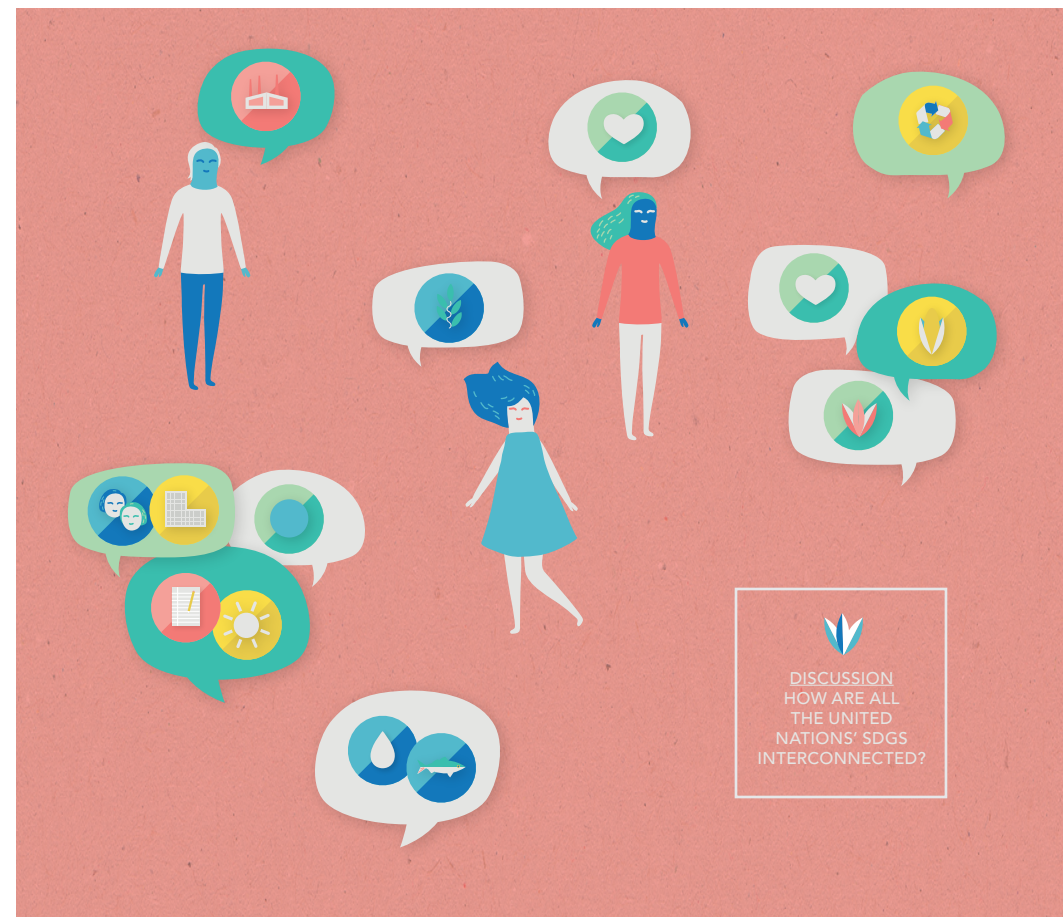
What goal should be addressed first, and why?

AFTER THE ACTIVITY

Discuss with your peers the issues and opportunities you all identified.

What actions can be taken to make changes and help achieve the Sustainable

Development Goals? For homework, consider continuing the exploration of the Sustainable Development Goals with a focus on one each week.



ADDITIONAL ACTIVITIES

Systems that Work

This requires a simple fill-in-the-blank template with two columns: "Systems that work" and "Systems that don't work" with a "Why?" next to each column. Come up with three systems that work and three that don't. Explain why they do or don't work. Pick one of the systems that doesn't work and develop three ideas for how to change the system so that it will work.

How Composting Works

Make a mini-compost heap in a clear container and identify the changes over time. This process of breaking down is really a slower version of what happens in our stomachs and in many other parts of nature.

Can you identify what is happening in this system?
Compare what happens in the mini-compost heap to other degradation systems, such as the human body.

Research Paper

Write a research paper and create a presentation on different actions taken by companies around the world to address the Sustainable Development Goals and increase the opportunity for sustainable lifestyles.

Look at the history of how sustainable development came about and has led to the Sustainable Development Goals over the last 30 years.

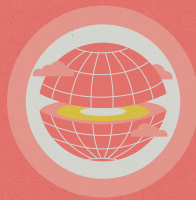
Consider what actions we can take in the future and write an essay on how they may or may not work.

Consumption Diary

Keep a consumption diary for a week and document everything that you buy and consume. A great way to do this is to have a small notebook in which to store receipts, or digitally, by taking photos of everything.

Create a presentation at the end of the week to show everything that you consumed. The point is for everyone in the class to see the differences in how people consume things.

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