

LEARNING JOURNEY

# CIRCULAR DESIGN





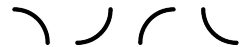
# How to use this guide

## **An opportunity for students to start their circular design journey.**

As much a learning experience as a design brief, it has been designed to help professors challenge their students to rethink everyday products, services and systems for a circular economy.

## **This guide is easily adaptable to your context.**

We inserted a sample brief, submission process and judging criteria that can be modified depending on your teaching subject and style.



# Your mission

Today's linear 'take, make, dispose' economy relies on large quantities of cheap, easily accessible materials and energy, and is a model that is wasteful and polluting.

A circular economy is an attractive and viable alternative that businesses have already started exploring today.

To drive the transition towards a more regenerative economy, we need to ***design differently***.





# The brief

Example from [Circular Design Case 2017](#)

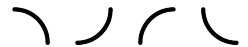
Understand an everyday product by exploring the system it is part of. Imagine how both could be redesigned to be in accordance with the circular economy and its three principles:

1. **Design out waste and pollution**
2. **Keep products and materials in use**
3. **Regenerate natural systems**

**Think of an everyday product that is made out of plastics or plastics-based fibres such as polyester.** Some examples include a cup, a bottle, a shirt, your trainers, a toothbrush, or a carpet in your flat. Think of the **precise context** it falls into.

**Think of how it is made.** It might be made of plastics and molded or extruded. It might be made of fibres and knitted/woven or nonwoven. Think of its packaging.

**Ask yourself:** Can you zoom out from end users and consider the wider network of stakeholders? Can you identify how they influence each other? Look at the material flows and examine where they come from and where they go after use? Can you find opportunities to redesign this system?



# Submission Process: 1

Example from [Circular Design Case 2017](#)

**The 1st submission requirement of the Circular Design Case is:**

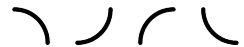
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**1 x system map with up to 3 highlighted circular opportunities:**

A system map around the product you chose. We are interested to see **the important stakeholders** and **the connections between them**. On top of that, we ask you to **highlight up to 3 opportunities** to make your everyday product more circular. Think about what would need to change in the system and what this change involves for the stakeholders.

**FORMAT:** Map either by hand or with a software of your choice (e.g. Illustrator).

**TIPS:** You might find much more information on the system by choosing a product you own. Remember this is an exploration process, you might have to do a few iterations.





# Submission Process: 2

Example from [Circular Design Case 2017](#)

**The 2nd submission requirement of the Circular Design Case is:**

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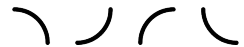
**1 x “One question for systems change” template:**

A synthesis of your reflection on the circular opportunities you explored.

**Formulate your most critical question on the “One question for systems change” template.** If you could ask one question to make your everyday product more circular, what would it be?

**FORMAT:** Fill in the “One question for systems change” template either by hand or with a software of your choice (e.g. Illustrator).

**TIP:** Think of this question as your own design challenge. What would you like other people to focus their attention on?





# Judging Criteria

Example from [Circular Design Case 2017](#)

**There are six criteria your entry will be judged against - make sure you consider them all:**

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## **1 System mapping**

The important stakeholders of the system are mapped out & the relationships between them are clear

## **2 Circular opportunities** (max 3)

They fulfill the principles of the circular economy & give insights on the relevant stakeholders that need to be involved

## **3 One question for systems change**

It is specific and action-oriented

## **4 Visual clarity**

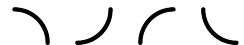
Information is easy to grasp and visually appealing

## **5 Feedback**

You have been provided constructive feedback by at least 3 other participants

## **6 Magic**

Your entry shows a high degree of creative confidence



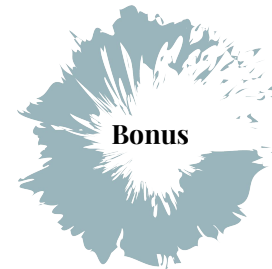
# *Choose your track*

**To help students in their mission, we have prepared a learning journey building on the Circular Design Guide and additional resources.**

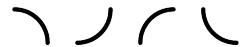
This journey is modular. You can choose your own level of depth and further dive into areas that interest you.

Entering the Circular Design Case can be as quick as a few hours of work. **Follow the “Minimalist” track.**

To go further and learn about circular design in more depth, **have a look at the “Bonus” track** at the end of this document.



**Ready? Let's jump in!**





# 1. *Start your circular economy journey*



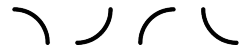
You may be wondering “*What is a circular economy*”?

**Have a look at our [introductory video](#) to get into the concept.**

[Listen](#) to Tim Brown introducing the circular economy from a designer’s point of view.

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**Now, have a closer look at how to create for the circular economy!**



## 2. *Design for the circular economy*

What does it mean to design for the circular economy?

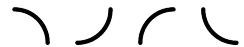


Get a sense **how [design thinking](#) helps to design for the circular economy!**

Circular design is about designing for users, stakeholders and [the systems](#) they are part of.

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**Are you starting to see how your everyday product could be more circular?** Check out the [different loops](#) you can design for.



### 3. *Start your systems thinking journey*

Keep zooming in and out throughout your journey!

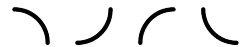


The Circular Design Case is all about **learning to adopt a systems mindset**.

**Do you start realising the system your everyday product is part of?**

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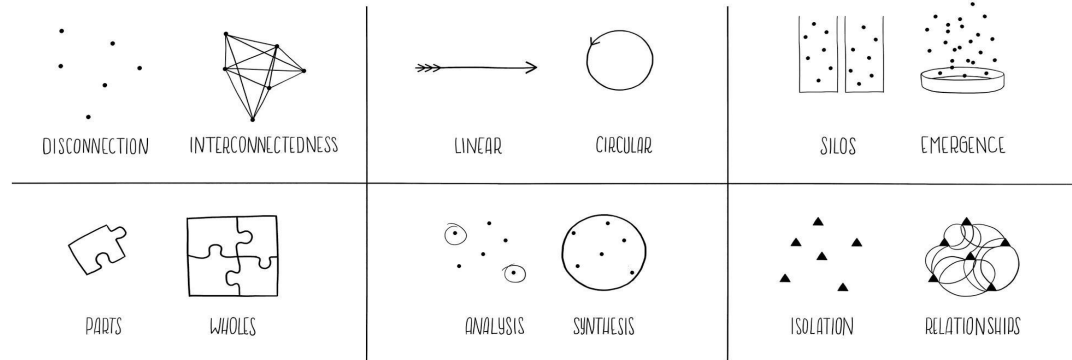
Take an extra step in systems thinking on the next page.



# 4. From linear thinking to systems thinking

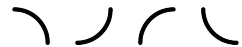
Leyla Acaroglu and UnSchool introduce us to the **key concepts and [tools of system thinkers](#)**:

## TOOLS OF A SYSTEM THINKER



Illustrator: Emma Segal

Source: <https://online.unschools.co/collections/systems-thinking>



# Systems mapping and influence diagrams



‘When individuals have a **better understanding of systems**, they are better able to identify the intervention points that lead to desired outcomes.’

*Jules Hayward*

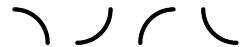
**A simple starting point is to map the system of your chosen product.**

Put it in the middle of the diagram. Then let your mind roam freely. Identify the many components / agents that influence it or who are influenced by it - people, flows of materials and energy, sources of money, legislation, information.

Draw the connections between the agents to show what influences what. Look in particular for feedback loops. Are they reinforcing or balancing ?

**Get further help by looking at the [systems mapping tool](#) for systems thinkers.**

Remember that you cannot know everything - make sure you make a conscious decision as where to stop!



## 5. *Finding circular opportunities*



‘We are called to be **architects of the future**, not its victims’

*Buckminster Fuller*

### **Think of what would need to change in the system and how it could be redesigned**

Once you have a deeper understanding of your object and the system it is part of, it's time to [identify circular opportunities](#).

#### **Ask yourself**

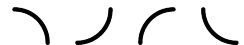
What forces at play impede the system to be fit for the circular economy?

How could new opportunities make the system more circular? Who would benefit?

Who would need to be involved to make this change happen?

Make sure these opportunities fit the principles of a circular economy:

- 1. Design out waste and pollution**
- 2. Keep products and materials in use**
- 3. Regenerate natural systems**





**EXAMPLES:**  
**Submissions Circular**  
**Design Case 2017**





**CIRCULAR  
DESIGN  
CASE**

IN ASSOCIATION WITH

THE  
CIRCULAR  
DESIGN  
GUIDE  

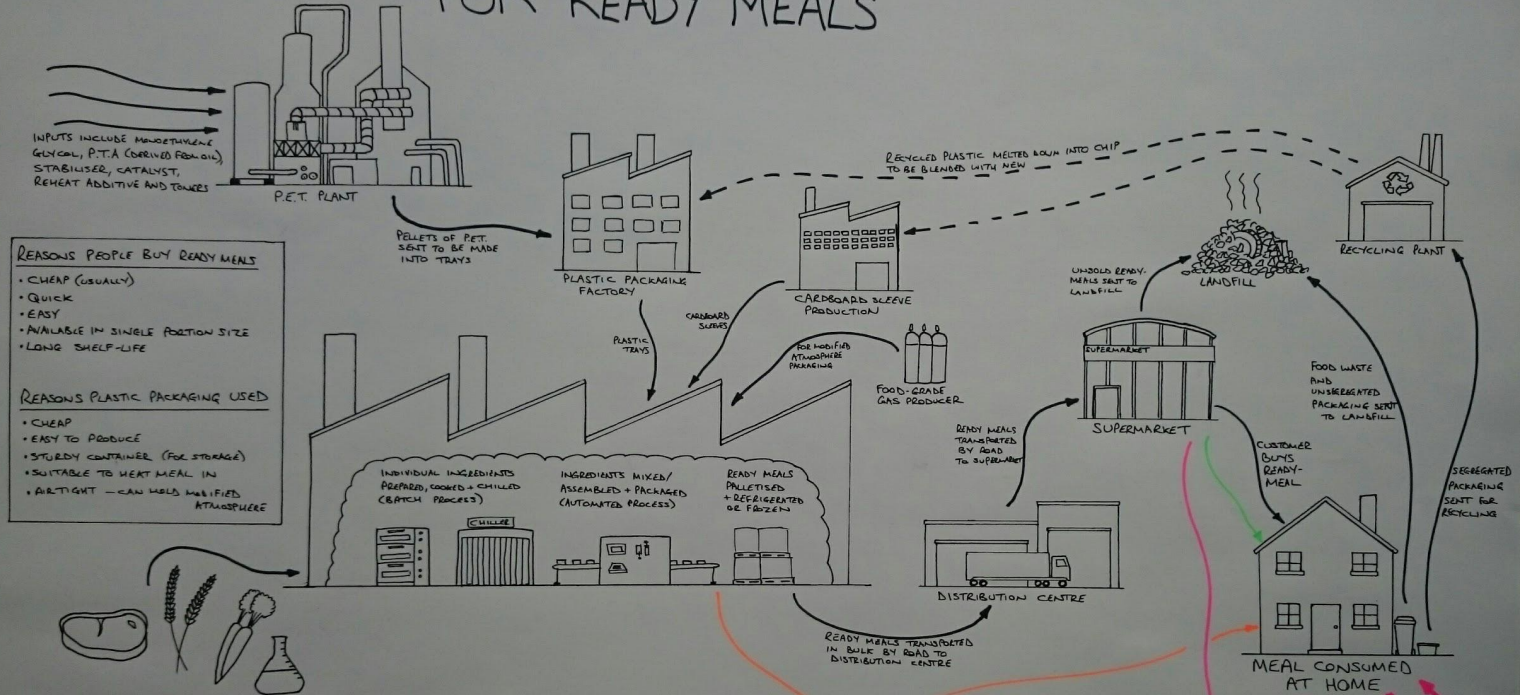

## One question for systems change

How might we provide time and budget constrained consumers the convenience of ready meals without relying on single-use plastic packaging?

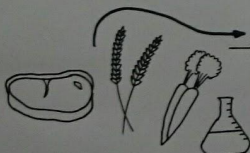
**What is the one question to ask to make your everyday product more circular?**



# SINGLE-USE PLASTIC PACKAGING FOR READY MEALS



- REASONS PEOPLE BUY READY MEALS**
- CHEAP (USUALLY)
  - QUICK
  - EASY
  - AVAILABLE IN SINGLE PORTION SIZE
  - LONG SHELF-LIFE
- REASONS PLASTIC PACKAGING USED**
- CHEAP
  - EASY TO PRODUCE
  - STURDY CONTAINER (FOR STORAGE)
  - SUITABLE TO HEAT MEAL IN
  - AIR-TIGHT - CAN HOLD MODIFIED ATMOSPHERE



**KEY**

EXISTING FLOWS ———

CIRCULAR OPPORTUNITY #1 ———

CIRCULAR OPPORTUNITY #2 ———

CIRCULAR OPPORTUNITY #3 ———

**CIRCULAR OPPORTUNITY #1**

COLLECTION OF RECIPES/INSTRUCTIONS EITHER WITH A SHOPPING LIST OR PRE-PACKAGED SET OF INDIVIDUAL INGREDIENTS SPECIFICALLY FOR PREPARING AND COOKING MULTIPLE MEALS AT ONCE, THESE CAN THEN BE REFRIGERATED/FROZEN FOR CONSUMPTION THROUGH THE WEEK.

**CIRCULAR OPPORTUNITY #2**

- READY MEALS PROVIDED ON A SUBSCRIPTION BASIS DIRECTLY TO HOME (EITHER INCUBATED OR WARM EATEN)
- MEALS PROVIDED IN REUSABLE CONTAINER, WHICH ARE COLLECTED AT NEXT DELIVERY
- DELIVERIES FREQUENT ENOUGH TO ENSURE FOOD DOESN'T NEED MODIFIED ATMOSPHERE (SO NO NEED FOR PLASTIC) BUT FAR ENOUGH APART TO KEEP COSTS LOW.

POTENTIAL RESTORATE SOURCE OF MEALS

**CIRCULAR OPPORTUNITY #3**

- 1 HOUSEHOLDS CONNECT WITH LOCAL RESIDENTS WHO WANT TO COOK MEAL FROM SCRATCH, NEIGHBOURS ASK THEM TO COOK EXTRA FOR A SMALL FEE.
- 2 LOCAL RESIDENT PURCHASES INDIVIDUAL INGREDIENTS FROM SUPERMARKET OR A LOCAL SOURCE.
- 3 LOCAL RESIDENT COOKS LARGER MEAL AND SHARES WITH NEIGHBOURING HOUSEHOLD, SAVING MONEY AND REDUCING FOOD WASTE
- 4 POTS/DISHES RETURNED AT CONVENIENT TIME.



**CIRCULAR  
DESIGN  
CASE**

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## One question for systems change

**How might we redesign the toothbrush using modular components, and natural materials to change the current disposable paradigm into one that is regenerative for people and the environment?**

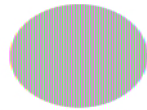
**What is the one question to ask to make your everyday product more circular?**

# Toothbrush

by Ambra Dentella, Joseph Rouse and Kenneth Arnold



First stakeholders



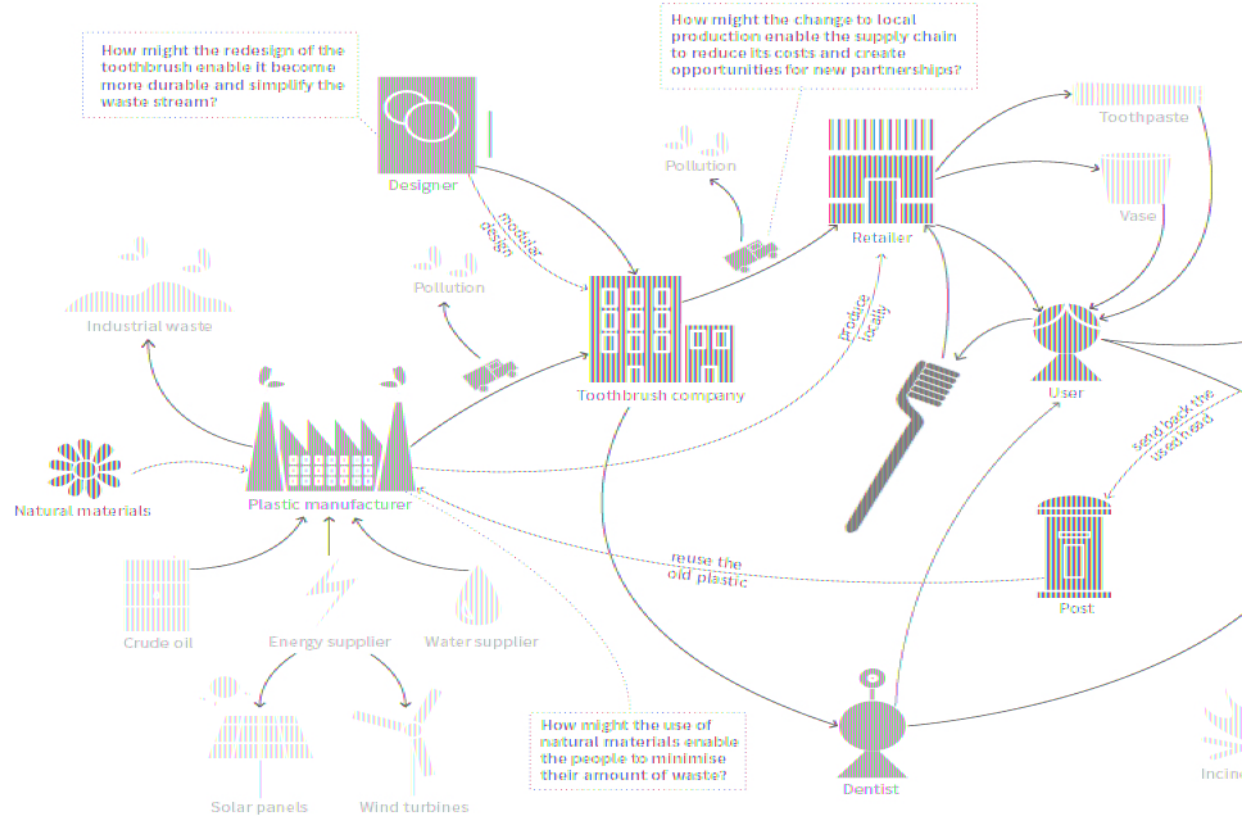
Second stakeholders



Third stakeholders



Opportunities



# *Now it's time to roll up your sleeves!*

## **It's time to prototype.**

Get yourself going at system mapping. Remember that you will need a few iterations.

## **Explore and refine.**

You can now synthesize your system map for others to understand it. Make sure your system boundary is clear.

## **Identify.**

Discover potential circular opportunities by knowing what you want to solve. Once done, can you ask the one question that, if answered, could lead to designing a better system for your everyday product?



# *Are you ready to participate?*

Do you feel you adopted the right mindsets throughout your journey?

Do you feel your proposition makes your product a better experience?

**Make sure you understand the submission process and judging criteria.**



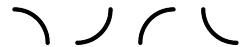
# WHAT'S NEXT?

**Are you inspired?** Do you want to redesign everything for a circular economy? Join our [emerging community of circular designers](#).

Are you looking for further material on circular design? Find a collection of [resources](#) on the Circular Design Guide.



We would like to thank players of People's Postcode Lottery for supporting the emerging circular design community.



# BONUS

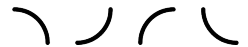
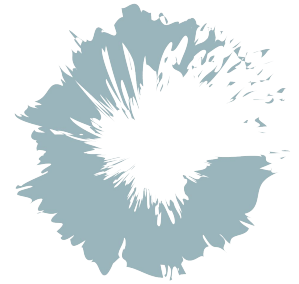




## *More on the circular economy*

Examine our [butterfly diagram](#) as well as the [building blocks](#) of a circular economy.

The New Plastics Economy is an ambitious, three-year initiative to build momentum towards a plastics system that works. [Start to understand](#) what the opportunity of a circular economy means for plastics.

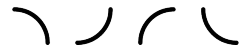
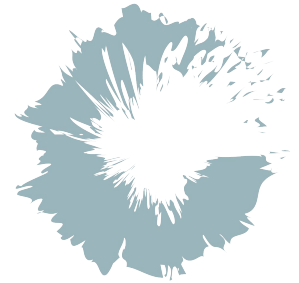


## *More on design for the circular economy*

Do you want to learn more about how designers turn common products into service models? Check out the [Service Flip method](#) on the Circular Design Guide.

You can also examine the [Biomimicry](#) and [Regenerative Thinking](#) methods to get inspired by nature.

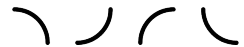
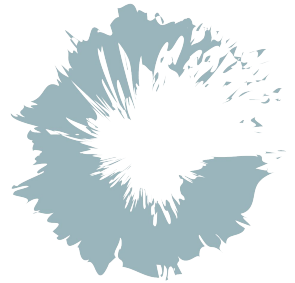
For a deeper dive have a look at our numerous [case studies](#). Get inspired by how others are driving the transition towards a circular economy.



## *More on systems thinking*

Adopting a systems mindset requires training your brain to think differently. Get acquainted to the [habits](#) of a systems thinker.

There are also courses available on systems thinking. [Check out](#) what UnSchool have put together.



## *More on finding circular opportunities*

Make your ideas more tangible by filling in the [circular opportunities](#) worksheet.

To further enhance the circularity of your product check out our method on embedding [feedback loops](#).

A \$2m New Plastics Economy Innovation Prize was launched in May 2017, calling designers, entrepreneurs, academics and scientists to rethink the plastics system and eliminate plastics packaging waste. [Get inspired by the winners!](#)

