

CREATIVE THINKING

CREATIVE THINKING: TECHNIQUES
AND TOOLS FOR BUSINESS SUCCESS



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This video introduces the concept of creative thinking and creativity's role in a circular economy.



EXPECTED LEARNING OUTCOMES

KNOWLEDGE	<ul style="list-style-type: none">• Actual knowledge of what creative thinking is and why it is important to use it in a circular economy• Knowledge of Mind- mapping and brainstorming during the creative thinking process
SKILLS	<ul style="list-style-type: none">• Identify the benefits of creative thinking for adapting to rapid change and generating innovation in the circular economy• Compare and contrast different creative thinking tools
ATTITUDES	<ul style="list-style-type: none">• Openness to developing skills in Creative Thinking and to generate diverse circular economy ideas• Willingness to offer support and guidance to others to think creatively• Willingness to solve problems by thinking creatively using such methods as brainstorm, mind-map or design thinking





SELF-REFLECTION EXERCISE

Please fill the self-reflection exercise to test your knowledge about creative thinking and creativity. There are only five questions, be careful, there are questions where the right answers are more than one.

[Click here to be taken to the quiz.](#)

INTRODUCTION TO THE PRINCIPLES OF CREATIVITY

“Creativity is the new power. Success is not about what we know, but about what we can create” (Griffiths, 2019). This article will introduce you to the principles of creativity and creative thinking.

There is evidence of creativity for as long as our history records extend back. There have been many definitions of creativity in literature and academia:

1. Creativity is a necessary step in the innovation process (Carson, & Carson, 1993)
2. Creativity is the key to education in its fullest sense and to the solution of mankind’s most serious problems (Guilford, 1967).
3. Creativity is typically defined as the ability to generate novel associations that are adaptive in some way (Ward, Thompson-Lake, Ely, & Kaminski, 2008).
4. Creativity may be defined as the capacity to transform experience into original and meaningful interpretations (Runco, & Cayirdag, 2012).
5. Creativity is essential to human progress (Hennessey, & Amabile, 2010).

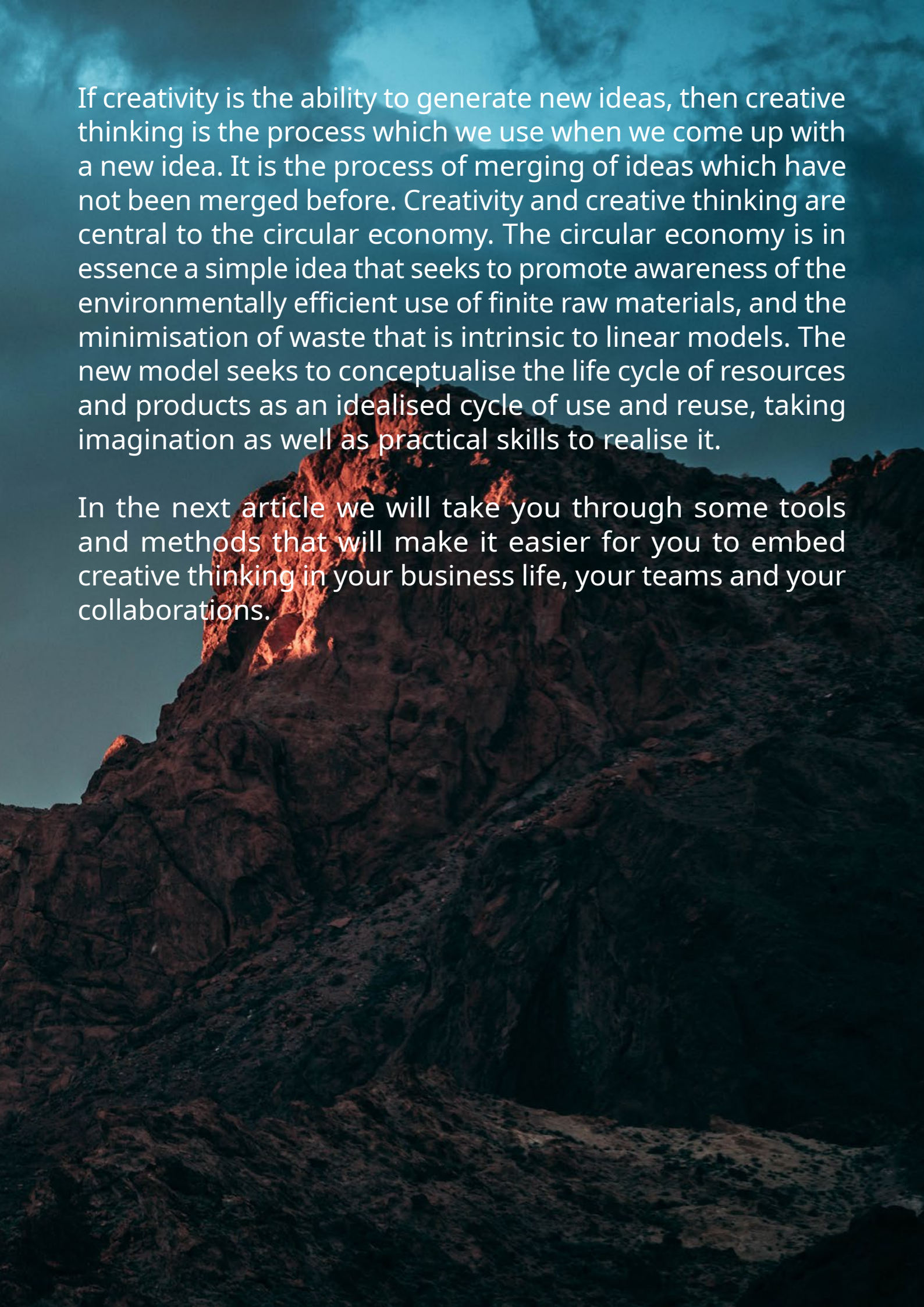
Creativity denotes a person’s capacity to produce new or original ideas, insights, inventions or artistic products which are accepted by experts as being of scientific, aesthetic, social or technical value, and responsibility.



Creativity is the ability to imagine or invent something new or value where the value may be personal, societal, financial or some combination of these. Creativity is not the ability to create something out of nothing, but the ability to generate new ideas by combining, changing or reapplying existing ideas. Some creative ideas are astonishing and brilliant while others are just simple good practical ideas that no one seems to have thought of yet.

Global management consultants McKinsey & Co emphasize that, "There are many reasons why companies perform well, such as market position or technology leadership. But it's also true that creativity and creative thinking is at the heart of business innovation, and innovation is the engine of growth." Since innovation is an essential driver for the new circular economy, creative thinking is also an essential skill for circular economy entrepreneurs who want to lead our transition into a sustainable future.





If creativity is the ability to generate new ideas, then creative thinking is the process which we use when we come up with a new idea. It is the process of merging of ideas which have not been merged before. Creativity and creative thinking are central to the circular economy. The circular economy is in essence a simple idea that seeks to promote awareness of the environmentally efficient use of finite raw materials, and the minimisation of waste that is intrinsic to linear models. The new model seeks to conceptualise the life cycle of resources and products as an idealised cycle of use and reuse, taking imagination as well as practical skills to realise it.

In the next article we will take you through some tools and methods that will make it easier for you to embed creative thinking in your business life, your teams and your collaborations.

THE METHODS AND TOOLS OF CREATIVE THINKING

There are a wide range of tools available for idea generation, employing divergent and convergent thinking for problem definition, exploration of problem features, generation of solution options, evaluation and implementation of ideas.

Companies can have the best products and processes now, but if an organization lacks creative thinkers, they will be left behind by their competition. There are many creative thinking methods and tools which can be used to develop new ideas and concepts. We have summarised two to get you started:



- Brainstorming can energize teams and drum up a staggering amount of ideas. It can tap into a broad body of knowledge and creativity. Brainstorming works best when the group is positive, optimistic, and focused on generating as many ideas as possible. At this link are provided seven rules that unlock the creative power of a brainstorming session: <https://www.designkit.org/methods/28> (only in English). Follow 5 steps to organize a brainstorm: 1) Pass out pens and Post-its to everyone and have a large piece of paper, wall, or whiteboard on which to stick them; 2) Review the Brainstorm Rules before you start; 3) Pose the question or prompt you want the group to answer. Even better if you write it down and post it; 4) As each person has an idea, have her describe to the group as she puts her Post-it on the wall or board; 5) Generate as many ideas as possible.



- There are also some digital tools which can be used for at brainstorm activities:
 - <http://keithsawyer.com/zzdeck/>
 - <http://75toolsforcreativethinking.com/>
 - <https://innovation.tools/products/killer-questions-card-deck>
- Mind Mapping is an easy way to brainstorm thoughts organically without worrying about order and structure. It allows you to visually structure your ideas to help with analysis and recall. A Mind Map is a diagram for representing tasks, words, concepts, or items linked to and arranged around a central concept or subject using a non-linear graphical layout that allows the user to build an intuitive framework around a central concept. A Mind Map can turn a long list of monotonous information into a colourful, memorable and highly organized diagram that works in line with your brain's natural way of doing things. It can be as simple as a piece of paper and a pencil, but there are also some great digital tools
 - <https://miro.com/templates/mind-map/>
 - <https://xmind.app/share/>
 - <https://www.ayoa.com/mind-mapping/software/>

Creative thinking methods can help to develop creativity that is integral to a problem-solving process. Employing creative thinking at work can make you a valuable team member, leader or entrepreneur. Many great entrepreneurs are or were creative thinkers who went independent routes and made some of the greatest discoveries and inventions of all time: Steve Jobs, Nikola Tesla and many others.



The background is a solid teal color with several large, overlapping, curved shapes in a slightly lighter shade of teal, creating a modern, abstract design.

THE ROLE OF CREATIVITY IN THE CIRCULAR ECONOMY

The circular economy is a systems solution framework that tackles accelerating global challenges like climate change, biodiversity loss, waste, and pollution. As the concept of the circular economy has become more widely accepted as an attractive way forward, companies around the world have been rethinking the way they design, make, and remake their products. Therefore creative thinking takes an important role and designers and creatives can have an important impact in the circular economy. They also encourage upstream solutions that can build systemic change.

Creative thinking offers a future where products, services, and systems are designed with the bigger picture in mind. A future where you can zoom in on user needs. A way to unlock a new frontier of creativity to address global challenges at their root.

In industries such as fashion and plastic packaging more than 80% of all materials in our products and services are destined for landfill or incinerators, with a significant amount also leaking out of the system and into natural environments.

That's why it is necessary to adopt a fundamentally different approach in the way the companies create the products, services, and systems around us. It is important to look 'upstream' to tackle the challenges that the world is facing — tackling them at the design stage rather than treating the symptoms of problems. For example, Lush and many other companies are simply selling products without packaging. Lush has redesigned some of its liquid personal care products to be sold as solid formulations that replace liquid products in plastic bottles. Their 'naked' range now includes



shampoo, conditioner, body wash, toner, and deodorant. It is crucial to look at systems as a whole to understand how each individual's creations fit into the bigger picture. And therefore it is important to have an inspiring vision and framework that can work in the long run. Entrepreneurs suggest using circular design as a shorthand for the practice of applying circular economy principles at the design stage of everything. It is a practice that embraces systems thinking to address some of the biggest interconnected challenges we are facing today.

For example Latvian based company "RePlastic" are producing garden furniture which are made from recycled plastic. The head of the company says that creative thinking played an important role in producing such innovative products. In a developing process there were mistakes, but it is important to learn from these mistakes and do it as cheaply as possible. Creativity is key to harnessing the unprecedented growth in new technology. From new bio-benign materials, to data-powered abilities to understand and design across complex supply chains, to digitally-enabled business models that address people needs without extractive material flows. Now is possible to work with nature, rather than against it. With the rising desire among creatives to use the transformative power of creativity as a force for good, the world has a real opportunity to switch to a more sustainable circular future without sacrificing economic growth.



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DESIGN THINKING AS TOOL FOR PROBLEM SOLVING AND DEVELOPING CREATIVITY

Design Thinking spreads creativity and innovation culture into people who choose to use this methodology, also it is a tool for resolving problems. It is one of methods that can be used in creative thinking. Design thinking is becoming more and more popular and can also be applied to any field; it doesn't necessarily have to be design-specific. Design thinking is an iterative, non-linear way of working that seeks to understand users and solve problems. It consists of five phases- empathize, define, ideate, prototype and test. The process is perfect for situations where the overall challenge is not clear or you have problems that are as yet unknown.



Design thinking is a human-centric approach that can help to deal with this environment of constant change. With rapid technological, environmental and social change becoming the new normal, it's important for companies to be as agile as possible. Design thinking should bring your ideas to life by putting users at the center of every process.



There are 5 phases of design thinking, but it's important to note that they aren't sequential steps. It is important to return to earlier phases at regular intervals throughout your journey. Small introduction about each phase:

1. Empathy is the foundation of a human-centered design process: observe; engage; immerse. At this phase entrepreneur can:
 - a. uncover needs that people have which they may or may not be aware of;
 - b. guide innovation efforts;
 - c. identify the right users to design for;
 - d. discover the emotions that guide behaviours.
2. The define mode is when entrepreneurs unpack and synthesize empathy findings into compelling needs and insights, and scope a specific and meaningful challenge. It's critical to the design process because it explicitly expresses the problem that entrepreneurs are striving to address through efforts. This can be very challenging, but one piece of advice is to combine specialists from different sectors.
3. Ideate is the mode of design thinking process in which main aim is to generate as many ideas as possible:
 - a. step beyond obvious solutions;
 - b. harness the collective perspectives;
 - c. uncover unexpected areas of exploration;
 - d. create fluency (volume) and flexibility (variety) in innovation options.



4. Prototyping is the fourth phase of both design thinking. It's an essential part of user experience (UX) design that usually comes after ideation, where teams have created and selected ideas that can solve users' needs. In prototyping, entrepreneurs can craft a simple experimental model of previous phases of a proposed product so you can check how well it matches what users want through the feedback they give. There is advice to consider prototyping from early on – using paper prototyping, if appropriate – so the feedback to gather from users can help guide development. This phase is very important, because the idea is tested with users and it can prevent future financial losses. Therefore – “fail quickly and cheaply”.
5. Designers or evaluators rigorously test the complete product using the best solutions identified in the prototype phase. This is the final phase of the five-phase model; however, in an iterative process such as design thinking, the results generated are often used to redefine one or more further problems. This increased level of understanding may help to investigate the conditions of use and how people think, behave and feel towards the product, and even lead to a loop back to a previous stage in the design thinking process. Entrepreneurs can then proceed with further iterations and make alterations and refinements to rule out alternative solutions. The ultimate goal is to get as deep an understanding of the product and its users as possible.



Design thinking is almost certainly the best for “thinking outside the box”. With it, teams can do better user experience (UX) research, prototyping and usability testing to uncover new ways to meet users’ needs. Design thinking’s value as a world-improving, driving force in business (global heavyweights such as Google, Apple and Airbnb have wielded it to notable effect) matches its status as a popular subject at leading international universities. With design thinking, teams have the freedom to generate ground-breaking solutions which is very important in a circular economy.



**INSPIRING EXAMPLES OF
CREATED PRODUCTS WHERE
CREATIVITY TOOK AN
IMPORTANT ROLE**

From the very beginning, the circular economy has been a design-led agenda, which encourages upstream solutions that build systemic change. Inspiring Examples of Created products where Creativity Took an Important Role:

- Ecovative is the mycelium company that designs and grows sustainable materials that come straight from nature. The packaging works like expanded polystyrene to protect fragile items in transit, but it is from a renewable source and does not contribute to plastic waste. Mycelium is a fungal network of threadlike cells that acts like a natural, self-assembling glue. It grows in 5-7 days without needing any light or water, digesting agricultural by-products and binding into any shape needed. At the end of the process, the material goes through a dehydration and heat treating process to stop the growth and to ensure the absence of spores or allergens. Once used, it can be safely composted and returned to the soil.
- The New European Bauhaus initiative, taking inspiration from the influential Bauhaus movement, provides Europe with the opportunity to demonstrate the potential of the circular economy, and lead the way in the transition. The Bauhaus brought creatives closer to the materials, tools, and techniques that would combine to create their products, encouraging them to experiment with these capabilities in new ways. This led to improvements in ease of manufacture, lightweighting, and aesthetics. It was also a step away from the backwards 19th century industrial context, and a declaration on the priority of the human experience. Today, new capabilities in biomaterials, additive manufacturing, digital fabrication, and artificial intelligence are unlocking limitless possibilities for making.



- Coco Chanel was the first designer to use a jersey in her fashions. At the time, the jersey was an inexpensive fabric used only for men's underwear. Chanel had faced difficult circumstances early in her life and elected to use a jersey to make women's clothes because it was inexpensive. With more expensive fabrics being rationed during World War I, Chanel purchased the material at a low cost and used the comfortable, functional fabric in her designs. She became known for her practical clothing line, ultimately revolutionizing the face of fashion forever. This is an example of a creative thinker who used problem-solving to change her – and the course of history. And she's not the only one. Creative thinking is a skill that can get you far in the workplace and in life.



Creative people are already unlocking many possibilities for a more circular approach, but real progress requires system innovation in tandem with technological innovation. If we want a circular economy that is safe, healthy, and regenerative, materials matter: it's not just about 'closing the loop', but considering the materials that are in the loop. So designers need to work with the system today, whilst moving it towards new outcomes. Creators need to understand, predict, and respond to the systemic implications of their inventions. They need a place to experiment, in a way that is visible and connected to industry and routes to scale.



For more resources and activities to help understand, define, make, and release circular innovations using creative thinking, explore the Circular Design Guide: <https://www.circulardesignguide.com/methods> created in collaboration with IDEO (IDEO is a global design company) and a selection of tools from our network and beyond to help with start: <https://ellenmacarthurfoundation.org/topics/circular-design/tools>.



FINAL ASSESSMENT TASK

TITLE OF THE TASK:

Develop a business idea

AIM OF THE ACTIVITY:

The aim of this activity, based on design thinking methodology, is to develop an idea for some business. This task needs to be done in groups of three or four people.

TIME REQUIRED:

34min (main task) + 60min (time to prepare presentation)

MATERIALS REQUIRED:

computer; paper, pencil, sticky notes

FORMAT FOR THE PRESENTATION:

powerpoint presentation

STEPS TO COMPLETE THE TASK:

Before the task, please, read one more time on EduZine about the topic of design thinking. Also, please, watch video about design thinking: https://www.youtube.com/watch?v=r0VX-aU_T8 (only in English)

1. phase: research - interview (time - 7 min)

- The team divides the roles: 1 interviewer, 1 user, others are observers;
- Interviewer asks questions to user
- User shares experience
- Observers record and make notes on user experience



2. phase: define a problem (7 min)

- Observer shall present to other members of the group observations made during interview (positive and negative experience)
- Group agrees on one problem to solve
- Group writes the problem down, starting with the words "How could we ..."

3. phase: develop ideas based on a brain-storming method aimed at creating as many ideas of solutions as possible by listening to other members of the group and get inspired by what colleagues have proposed (10 min)

- Each group member writes three ideas for a solution - each solution on a separate page
- Present the ideas to other group members

4. phase: development of ideas (10 min)

- The team agrees on one idea for which to develop a concept:
- Figure out the name of the product or service
- Identify target audience (target group)
- Define the intended outcome (in the context of the previously defined challenge "How could we ...")



5. phase: create a presentation (60 min), include answers to the following questions in your presentation:

- What problem has been addressed?
- What is the solution to the problem?
- Product or service name
- Target audience (target group)
- Intended outcome
- One key functionality

6. phase: each team does the presentation (max 5 min)



FINAL TEST

Please fill the final exercise to test your knowledge about creative thinking and creativity. There are only five questions, be careful, there are questions where the right answers are more than one.

[Click here to be taken to the final test.](#)



FURTHER READING AND RESOURCES

<https://www.researchgate.net/publication/321750689>
[Creative Thinking Processes The Past and the Future](#)

Laura Ruiz-Pastor, Elena Mulet, Vicente Chulvi, Marta Royo, Effect of the application of circularity requirements as guided questions on the creativity and the circularity of the design outcomes, Journal of Cleaner Production, Volume 281, 2021, 124758, ISSN 0959-6526,
<https://doi.org/10.1016/j.jclepro.2020.124758>.

(<https://www.sciencedirect.com/science/article/pii/S0959652620348022>)

<https://ellenmacarthurfoundation.org/topics/circular-design/overview>

<https://ellenmacarthurfoundation.org/articles/the-new-european-bauhaus-and-the-circular-economy>

<https://ellenmacarthurfoundation.org/introduction-to-circular-design/we-need-to-radically-rethink-how-we-design>

<https://chuckfrey.medium.com/the-ultimate-list-of-creativity-tools-d8993084a120>





LEARNING CIRCLE



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