

workshop

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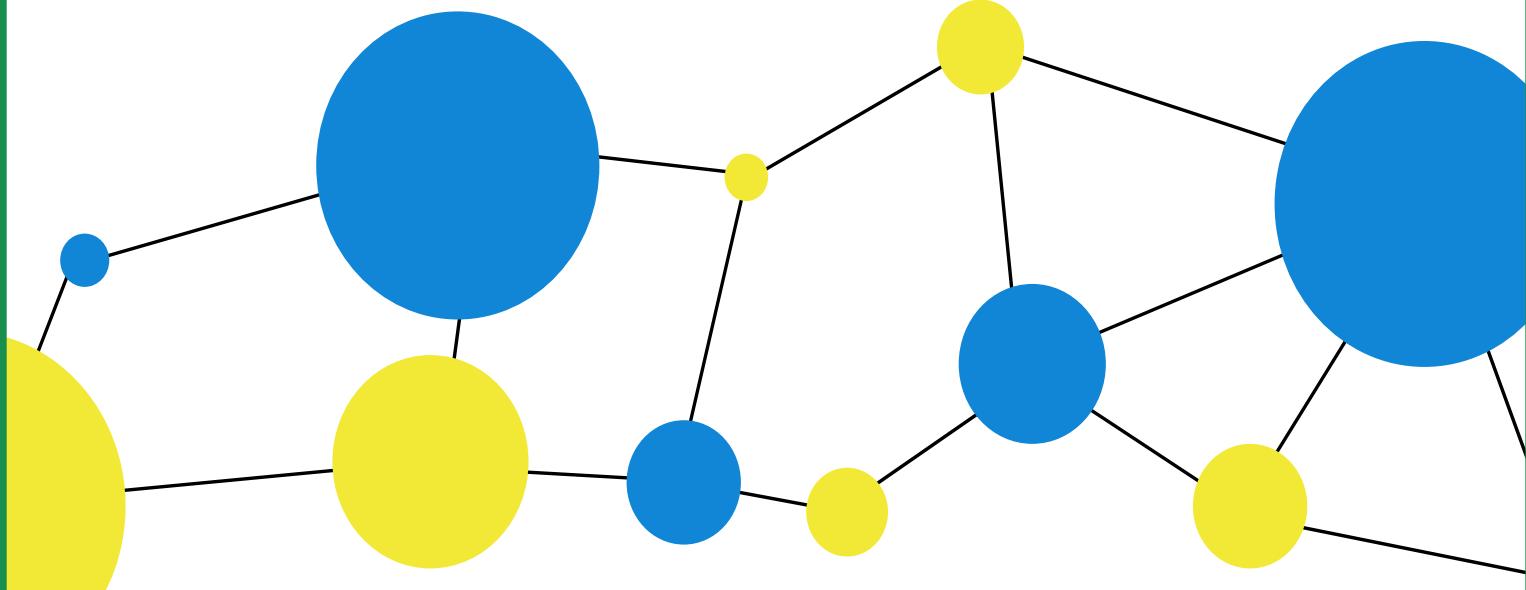


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water and waste



1

what we want to achieve in this workshop?

A human being is composed of 70% water and we live on a planet with a surface three-quarters covered in water, although only 2.5% of the total is fresh water (and much of it in the form of ice at the poles). Neither plants nor animals can live without water. Do you know the Survival Rule of 3? It is the time a human being can generally endure without: breathing: 3 minutes; drinking: 3 days; eating: 3 weeks.

This workshop will help you become aware about water pollution and sustainable management of water. You will also understand the importance of preserving our water reserves and take care of them as they are a precious treasure for life. If we pollute and make them unusable for consumption, we will be causing enormous damage to ourselves and the environment. That is why it is essential to make responsible use of water.

2

goals: after completing this lesson, you will be able to:

1. Circular Economy

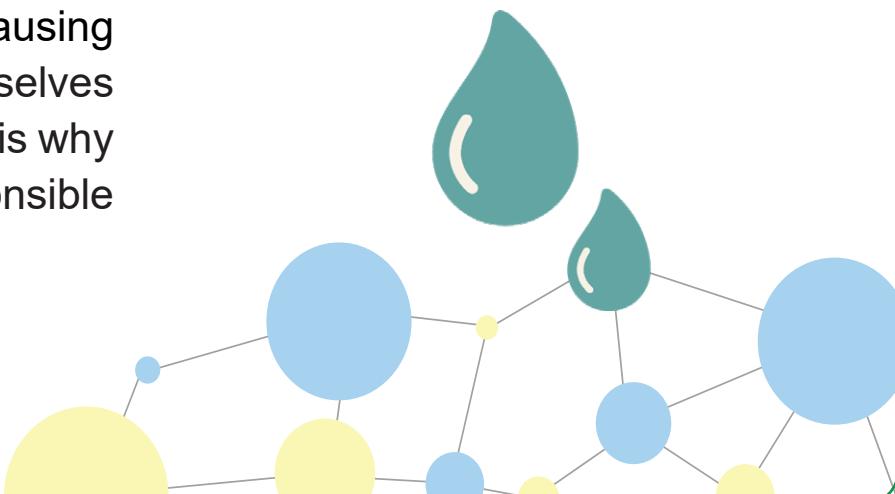
To have a basic knowledge of what the circular economy is, meaning, use and objectives focused on water use.

2. Water pollution (negative scenario)

- To understand what characterizes water in bad conditions
- To recognize the main causes of water pollution
- To become aware of the consequences of polluted water on our health and the environment

3. Sustainable water (positive scenario)

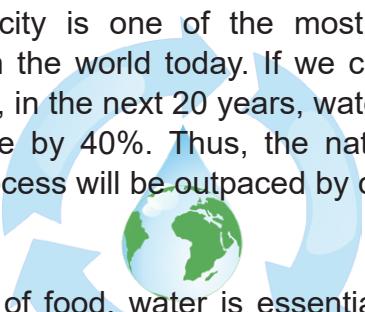
- To become more responsible about wasting water
- To learn ways to ensure a sustainable future in water matter
- To raise awareness among family and friends about the importance of responsible water use through the implementation of comprehensive plans aimed at establishing water saving objectives



3

theoretical introduction: what is the circular economy? how can we achieve sustainable water management?

Water scarcity is one of the most important problems in the world today. If we continue as we are now, in the next 20 years, water demand will increase by 40%. Thus, the natural water renewal process will be outpaced by demand by 60%.



In the field of food, water is essential. For this reason, we have to manage and use water in a sustainable way. In the agrofood industry, we must work to reduce its consumption by optimizing its processes: reuse in a way that does not affect the quality or safety of food, improve the quality of discharges to reduce the negative impact, etc.

DID YOU KNOW THAT EUROPE PRODUCES A HUGE AMOUNT OF PLASTIC?

58 million tons a year

MOST OF THE PLASTIC PRODUCTION IS FOR BOTTLED WATER OR SOFT DRINKS THAT NEED WATER FOR THEIR PRODUCTION.

* Info source:

<http://www.comunidadism.es/blogs/plasticos-para-la-economia-circular>

More info links:



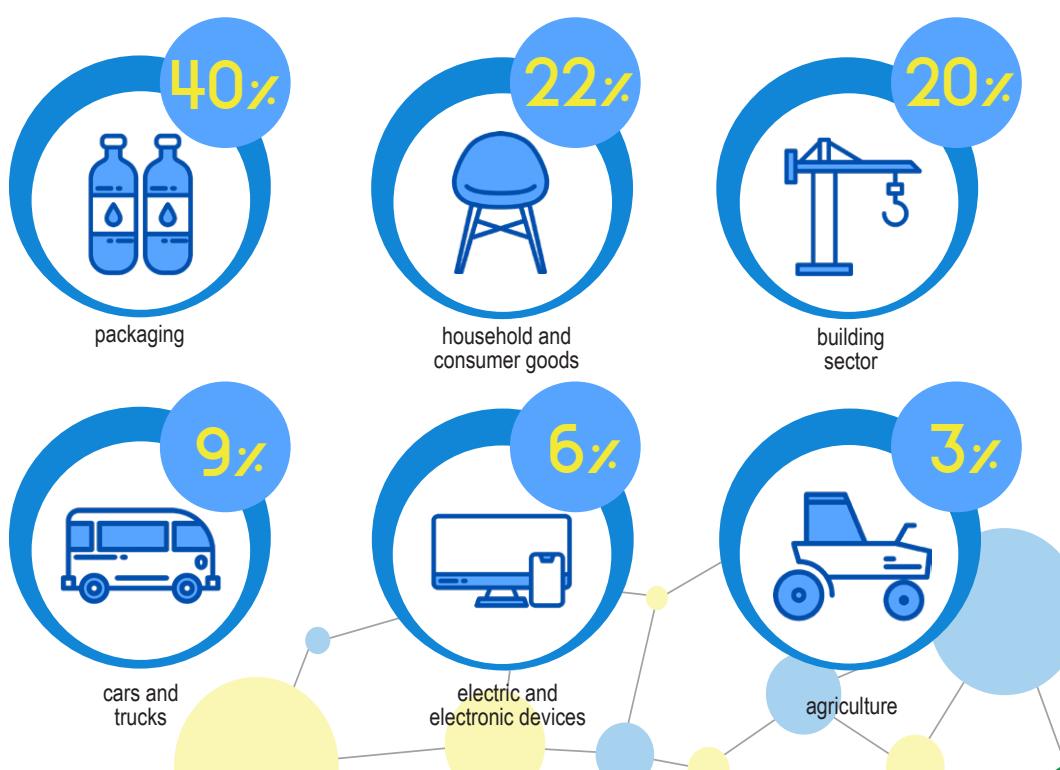
- [Water reuse from a circular economy perspective and potential risks from an unregulated approach](#)
- [Circular Economy Model for Water and Wastewater Management](#)

The keys to making water management more sustainable are:

- Reach agreements within the agrofood sector for the efficient water use.
- Develop new technologies to make water drinkable (purification and reuse of wastewater) that are more efficient and sustainable.
- Use tools based on life cycle analysis to calculate the use of water in food production during the chain and determine the critical points in consumption.
- Raise awareness and collaborate with farmers and ranchers on the efficient use of water to ensure a sustainable supply.
- Improve efficiency in water use and reduce its consumption in production processes.

* "La Economía Circular en el Sector Agroalimentario", ADICAE: Asociación de Usuarios de Bancos, Cajas y Seguros.

<https://ecologing.es/publicacion-la-economia-circular-en-el-sector-agroalimentario-%c2%b7-adicae/>



water pollution: negative scenario

Currently, we are facing a huge challenge: the pollution of our most important water sources, such as rivers, oceans, canals, lakes and reservoirs. It is one of the great concerns nowadays, because without good quality water it is impossible to guarantee the well-being of the environment, the human being, animals and plants.



industrial waste pollution



non-biodegradable waste going to the sea



oil-in-water contamination

Consequences

Besides harming the animals, when the water is polluted in rivers, lakes and seas, it allows the toxic elements an entry into the food chain. Humans, being at the end of the chain, can end up ingesting large amounts of heavy metals that accumulate from one animal to another, and therefore it is recommended not to abuse the consumption of tuna or any other kind of canned fish. On the other hand, the more contaminated the water is by these toxic elements, the more likely it is that these elements will evaporate and cause acid rain.

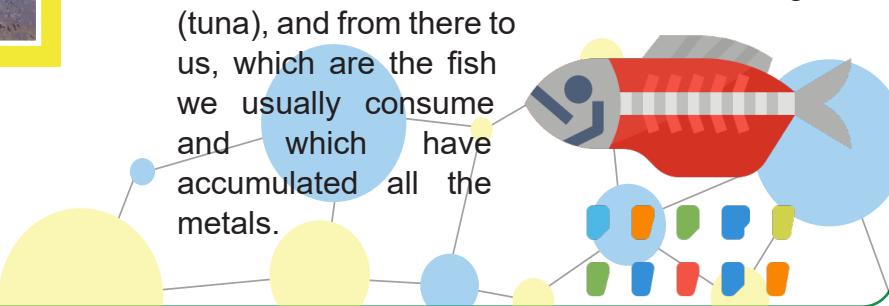
acid rain

can be carried great distances in the atmosphere, not just between countries but also from continent to continent. The acid can also take the form of snow, mists and dry dusts. The rain sometimes falls many miles from the source of pollution but wherever it falls it can have a serious effect on soil, trees, buildings and water, so it means: huge damage on all species.



heavy metals in food

the most dangerous heavy metals are mainly mercury, cadmium, tin, arsenic, lead, cobalt or copper. Their origin is usually related to industrial activity and their polluting discharges into rivers whose water and sludge end up in the sea by dragging the currents. The metals are usually deposited on the bottom or in some cases kept in suspension. This is how they start in the food chain: water filtering organisms (molluscs), from there to small carnivorous fish, from there to the grids (tuna), and from there to us, which are the fish we usually consume and which have accumulated all the metals.



human activities and the negative influence on water:

- Throwing trash into the toilet as well as into rivers, lakes, seas



- Industrial companies and the quantities of polluting products derived from their industrial processes



- Excessive deforestation makes rivers, lakes and other water sources to dry out



- Oil spills that due to the poor transport of oil and the filtration of products (such as gasoline which is stored in underground leaking tanks) are filtering the substances to the water sources suitable for human consumption



More info links:



- [Why Is Water Important? 16 Reasons to Drink Up](#)
- [Water Pollution: Everything You Need to Know](#)
- [What Are the Effects of Water Pollution on the Environment?](#)



wet wipes are designed to remain wet and therefore do not break up as easily as toilet paper in water. they need around 100 years for that.

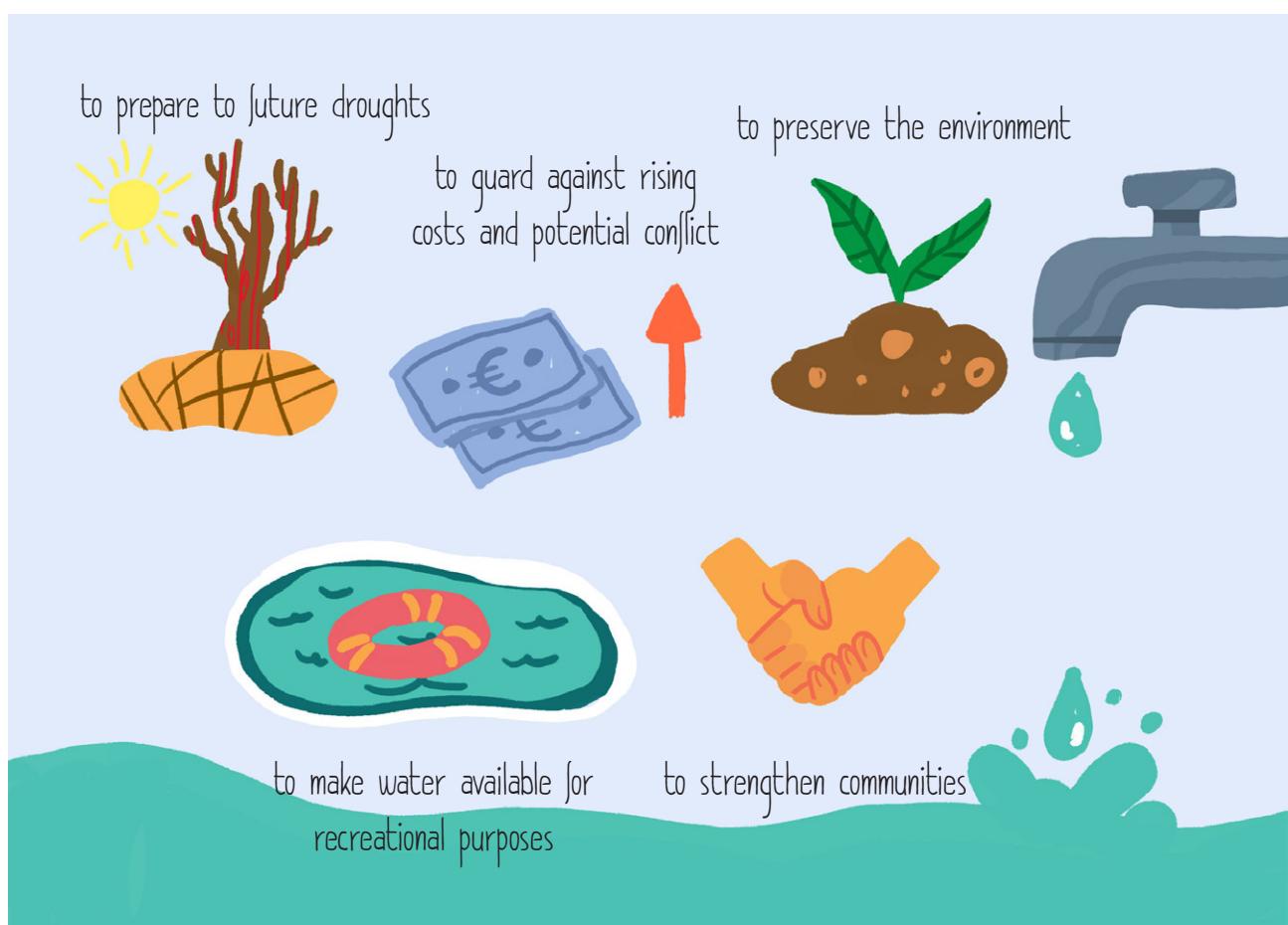


Water is essential for sustainable development, to maintain the integrity of the environment, for the alleviation of poverty and hunger and is indispensable for the health and well-being of humans.

Sustainable water management is a critical issue for the future of the planet and it is very important to make an effort to raise awareness about its responsible use.

why it is important to conserve water?

- o washing machine with maximum load wastes 90 liters of water [150 bottles] and during a 5-minute shower 170 liters [283.3 bottles] are wasted.



Info source: "The Balance"

[https://www.thebalancesmb.com/
conservation-efforts-why-should-we-
save-water-3157877](https://www.thebalancesmb.com/conservation-efforts-why-should-we-save-water-3157877)



Tips for sustainable use of water:

Water saving tips in the kitchen

- Leave the tap water running just to rinse the dishes and turn off the tap while you soap them.
- Prevent taps from dripping when you're not using them.
- Use the dishwasher only when it is completely full and use a water-saving program.
- Wash fruits and vegetables in a container and not under running water. You can do the same to defrost food.
- Use the water from the previous point to water the plants.
- Soak pots and pans for a few minutes before scrubbing to avoid wasting too much water.

Tips for saving water in the garden

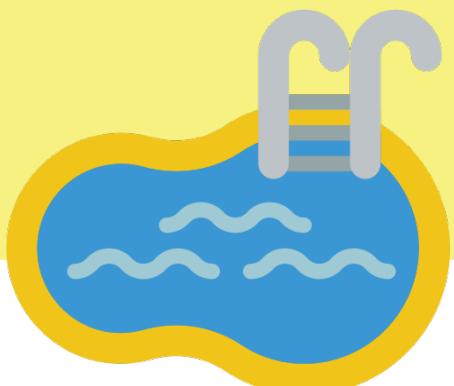
- Water the lawn and plants in the morning or evening, avoiding the hours of greatest water evaporation.
- Check for leaks in taps, hoses, water pumps... Being in the garden it is easy to forget this.
- Use a broom instead of the hose to clean outside and sweep up leaves.
- Water small areas by hand and use sprinklers for larger areas. Program the latter and use them efficiently following the manufacturer's advice.
- Keep your lawn clear of vegetation and shrubs, especially on slopes and more difficult to water areas.

Tips for saving water in the bathroom

- Turn off the tap while you're shaving or brushing your teeth.
- Turn off the shower while you're brushing your hair.
- Take a shower instead of a bath and don't stay in the shower too long. If possible, reduce the duration a couple of minutes.
- Make sure the toilet tank doesn't leak. Also check that the chain closes when the tank is emptied.
- Check that all taps have water aerators.
- Throw the toilet paper in the wastebasket and not in the toilet, thus avoiding the absurd use of the toilet.
- Install a diffuser in the shower head and reduce consumption by half without realising it.

Tips for saving water in the pool

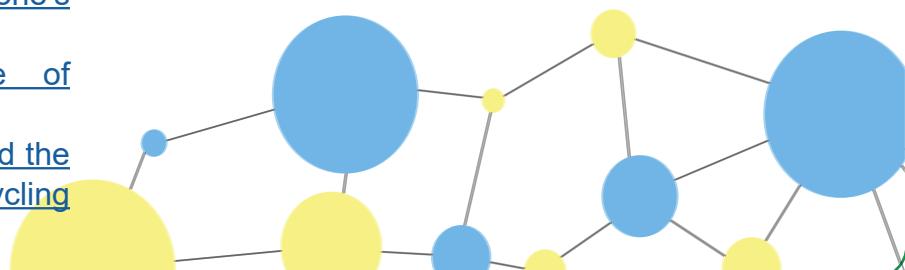
- Avoid water evaporation by covering the pool when possible. This will also prevent it from getting dirty and you will not have to resort to cleaning devices such as pool cleaners so constantly.
- Check that there are no leaks. To do this, indicate the level of the pool and, after 24 hours, check that the level is the same. Turn off the automatic filling device while you do this check.



More info links:



- [Saving Water is Everyone's Responsibility](#)
- [Reflecting on the Importance of Responsible Water Use](#)
- [Learn How to Reuse Water Around the Home With These 7 Water Recycling Ideas](#)



4 tip sheets

water pollution

Age 6-10. Draw 3 things that cause water pollution. Here you have some examples



Age 11-15. Identify if it is cause/effect or a way to prevent water pollution:

1) Do not throw chemicals down the sink: _____

2) Industrial waste: _____

3) Diseases: _____

4) Use water wisely: _____

5) Death of aquatic animals: _____

6) Oil Pollution by Oil Industries: _____

Age 16-20. Discussion

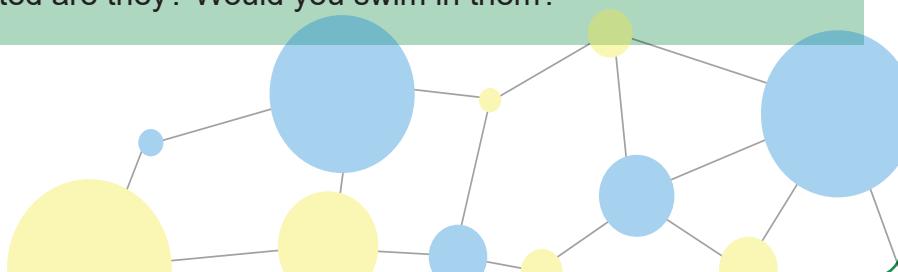
1) How can we control water pollution?

2) How does deforestation contribute to water pollution?

3) How does urbanization contribute to water pollution?

4) What are the effects of water pollution on humans and animals?

5) Rivers in your country. How polluted are they? Would you swim in them?



4 tip sheets

sustainable water management

Age 6-10. Answer with YES or NO.

1) Throw our trash into the toilet.

YES

NO

2) Water plants only when necessary.

YES

NO

3) Turn the water off while you brush your teeth.

YES

NO

4) Take long showers.

YES

NO

5) Throw away the water from your bottle if you don't want to drink it.

YES

NO



Age 10-15. Make a list showing all the ways water is used in these categories:

in nature all around us

plants and animals

at home

recreation

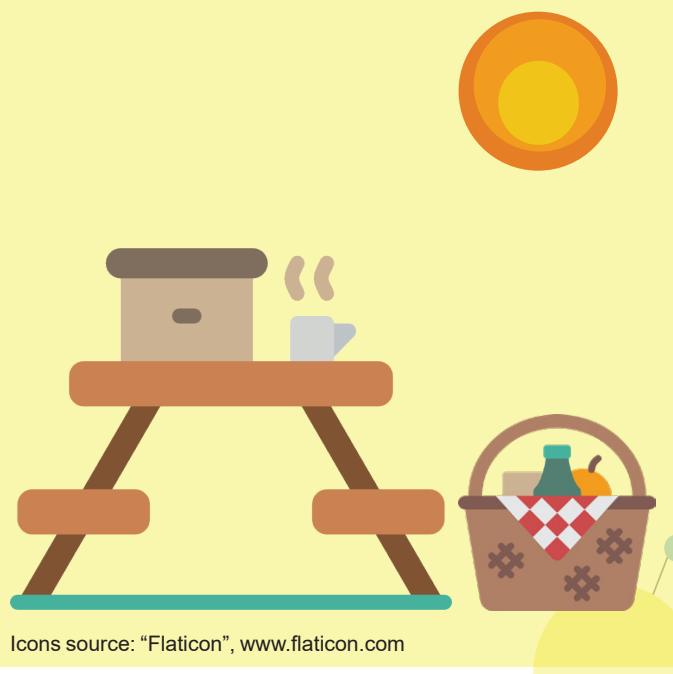
Age 16-20. Would you like your garden to be environmentally-friendly, water-efficient, and beautiful? Get creative, think how you can achieve this and list at least 8 ways/ideas.



5 role-play

Role-playing game.

You are with your family and some friends on a picnic, in a park. You see that the river going through the park is full of plastic bags, bottles, empty chips bags, etc. You want to use the public toilet but the sink is full of cigarette butts and the water is still running. The toilet is clogged with wet wipes and Band-Aids. After seeing this, you need to think of how you can spread awareness, with the rest of your family and friends, about water pollution and water waste. Share ideas about some biodegradable products people can use to prevent water pollution, tips on how to save water, etc.



Icons source: "Flaticon", www.flaticon.com

6 more activities

If you want to continue learning about the circular economy, efficiency, sustainability and responsible consumption, here you have several links to have more information:

Age 6 -10: Digital Breakouts

Age 11-15: Escape-Rooms

Age 16-20: WebQuest

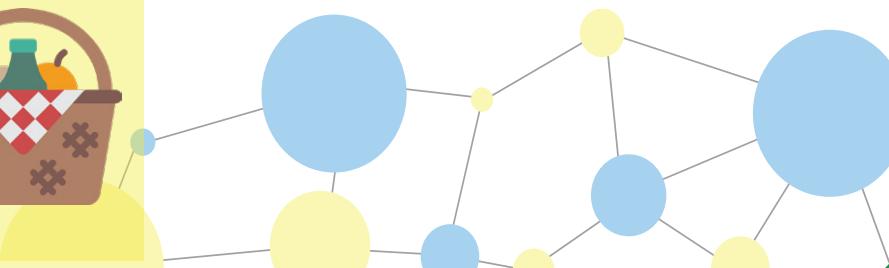
7 conclusion

After this workshop we would like to discuss and think about the things you learned.

What have you learned?

What changes are you going to make on a daily basis in order to become more responsible about the use of water and less water pollution?

Would you share this information with your family and friends in order to have a more sustainable use of water?





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