FUN THE SERIES DAMENTAL

MODEL RAIN WATER FILTRATION

What you will need

- Paper cups
- Access to water
- Natural materials (for example, leaves, twigs, feathers)
- Small amount of stones
- Small amount of sand
- Container to hold water such as a bottle
- Large Jar

Before you begin

- Don't forget to make sure all young people and adults involved in the activity know how to take part safely.
- Make sure you'll have enough adult helpers. You may need some parents and carers to help if you're short on helpers.

Set the scene

1. Discuss with the Group whether we always have to use treated, drinking water from the tap for everything around the house and garden? What other water sources could we use?
2. Discuss how rainwater can be used as a source of water when other sources are not available.
3. How could we catch rainwater to use around our meeting place? What problems might we have with using rainwater?
4. Share with the Group an image of a multi-tier grey/rain water harvesting system. Chat about how this might work in your meeting place.
5. Explain that creating a multi-tier model would be tricky so the model in this activity will have the same stages but in one container.
6. Discuss what materials would be good to use to filter water.

Create your water filters

1. A Leader should set some boundaries and limits, so everyone knows where they can go during the activity.
2. Everyone should spend up to 10 minutes searching for natural materials to use in their water filter. They should experiment and choose anything they think will help to filter out dirt from the water, but they shouldn't take anything from living plants.
3. Stones and sand work really well for this activity. If you don't have access to a space to explore and forage, you could collect materials to use before the session, and ask people to bring their own or use artificial materials you may have in a survival situation, such as clothing.
4. While they're searching, fill a container with water and add a small amount of dirt and debris to the water to create some dirty water and set it aside.
5. Once everyone's finished collecting their materials, take a paper cup and glass jar and a pen.
6. Everyone should poke multiple holes in the bottom of one of their cups using a pen.
7. Everyone should layer the natural materials they collected, such as small stones, moss, and leaves, in the cup with the hole in to create a filter. They should experiment with different amounts of each material and their positions in the cup.

Test your water filters

1. Slowly pour the dirty water into each cup.
2. Place the water filter cup in the glass jar. A good filter should remove all the visible dirt and debris, but no one should drink the filtered water.
3. Everyone should pour the water through a few times to see if they can remove even more dirt. They should try to perfect their filter each time, until it works as well as possible. It's still not safe to drink the filtered water.
4. As the Group are filtering their water, the Leader should remind them that it's not just the dirt that you can see in the water that might be bad for you. Bugs, bacteria and viruses can all hide in water and make people very unwell.

Reflection

Water is an increasingly stressed resource globally, and events such as droughts will occur with increasing frequency with climate change. Extracting water can affect freshwater environments and the wildlife that rely on these habitats.

Furthermore, the process of water treatment that allows us to access water from the turn of a tap is incredibly energy intensive, a contributor of climate change.

Therefore, when we use water in the home we should look at how we can use water as efficiently as possible. One method is by rainwater harvesting. In traditional systems, rainwater runs off the roof of a house, into the gutters at the base of the roof where it is conveyed to the drains and into the sewage system.

In a rainwater harvesting system, the water is instead conveyed into a storage tank where it is collected and used to water the garden during drier periods. This makes use of water that would be lost to the sewer system and reduces the need to use treated tap water and is therefore a more efficient way to use water. What are some ways you can think of implementing this at your Scout premises or local Scout campsite to reduce your impact on the planet?

Change the challenge level

- Increase the challenge by having older Sections creating a filtration system
- To lower the challenge level, have a Leader already make a water filter and do a demonstration, then talk about water filtration