



**WEEK 8:**  
**OUTDOOR SURVIVAL**

## **JOIN US AS WE EXPLORE THE GREAT OUTDOORS TO LEARN DIFFERENT WAYS TO HELP US STAY SAFE OUTSIDE.**

Understanding how to stay safe outside in different situations is important. Sometimes emergencies happen and you might find yourself lost in an unfamiliar place in nature. Whether hiking, camping or exploring, it is best to be prepared. Just like other living things, we need shelter, water and food to survive. Knowing how to find shelter, make a fire, find clean water and when to search for food are life-saving skills. The best thing you can do in a survival situation is stay calm and be prepared. Join us as we learn some of the basics of survival and tips to stay safe outdoors!

### **DAY 1:**

## **CRYSTAL CLEAR**

No matter where you are, you always need clean water to drink. Though most of the Earth is covered with water, the water we find out in nature usually isn't safe for people to drink. From dirt and gravel to tiny bacteria, there could be many things in water found outside that could make you sick if you were to drink it. Most hikers or backpackers will bring extra water with them when they venture outdoors, but you can also purify water to make it safe to drink. A water filter is one way to purify water. Let's see how a water filter works by building and testing a simple design!

### **Before you start, you should have:**

- Water
- Coffee grounds or potting soil
- A spoon
- Four cups
- Pebbles or small rocks
- A sponge or dishcloth
- A coffee filter or paper towels
- Scissors or a box cutter
- A plastic bottle without the lid  
(a water or soda bottle will work)

**Note: This water filter is only for demonstration. Do not drink any water from this filter or use this filter to treat water outside for drinking.**

## Get started:

1. Pick the area where you are going to work. You will need somewhere where you can work with water.
2. Fill a cup up with water and stir two or three spoonfuls of coffee grounds or potting soil into the water.
3. Build your filter frame: (simple illustration of final product)
  - Ask an adult to help cut the plastic bottle in half using the scissors.
  - Flip the top half of the bottle and place it into the bottom half, so that the drinking spout is inside the bottom half.
4. Look at the dirty water, the filter frame, the pebbles, sponge and coffee filter. Think:
  - Do you think you will be able to filter out all of the coffee grounds from the dirty water?
  - The water filter frame needs something inside of it to trap the coffee grounds but let the clean water through. Which material do you think will trap the most coffee grounds from the water?
5. Place the pebbles into the top part of the frame, making sure that none fall through into the bottom.
6. Pour one third of the dirty water onto the pebbles and wait until all the water has passed through the pebbles and into the bottom of the filter.
7. Remove the top part of the filter frame and take the pebbles out.
8. Pour the water from the bottom half into a cup and set it aside.
9. Replace the top part of the filter frame.
10. Repeat steps five through nine with the sponge and set the water aside.
11. Repeat steps five through nine with the coffee filter and set the water aside.
12. After running water through the filter with the pebbles, sponge and coffee filter, compare the three cups of water.
  - What happened when you used the pebbles in the filter frame?
  - What happened when you used a sponge in the filter frame?
  - What happened when you used the coffee filter in the filter frame?
  - Which of the three materials did the best job of filtering the water? Why do you think so?
  - Which of the three materials did the worst job of filtering the water? Why do you think so?
13. Share what you discovered with someone!

## Keep exploring!

- Try the same experiments with something even smaller than coffee grounds, like flour or sugar.
- Try placing more than one material in the filter to clean the water, like placing the pebbles on top of the coffee filter.
- Use something other than water, like juice or milk, and see what happens.

## More information on purifying water:

<https://www.youtube.com/watch?v=-bvZCdMecEo>



<https://www.nps.gov/articles/2wayspurifywater.htm#:~:text=Boiling%20is%20the%20best%20way.rolling%20boil%20for%203%20minutes.>



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## Join Sam Noble Museum educators as they try out the Crystal Clear experiment!

[https://youtu.be/cuB\\_-BZHd0w](https://youtu.be/cuB_-BZHd0w)



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## What did you find?

Upload a photo or video and tag the Sam Noble Museum on Instagram or Facebook. You can also use the hashtags **#samnoblehome** and **#summerexplorers** to share!