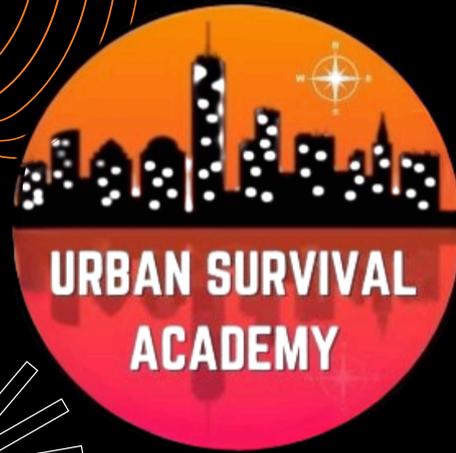


URBAN SURVIVAL ACADEMY

Empowering the next Generation with essential Urban Survival Skills

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UNDERSTANDING SAFE DRINKING WATER SOURCES

Why is Water so Important?



Imagine trying to go a whole day without drinking anything. You'd feel tired, dizzy, and very thirsty. That's because your body is mostly made of water! In fact, over half of your body is water – it's in your blood, your brain, your muscles, even your bones.

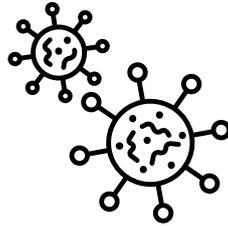
Water helps:

- Keep your body temperature steady
- Move nutrients around your body
- Get rid of waste
- Help your brain think clearly
- Give your muscles strength

If you don't drink clean water every day, your body can get dehydrated. This means you lose more water than you take in, which is dangerous and can lead to headaches, confusion, and even fainting.

So what happens if you're in a city during an emergency—like a blackout, flood, or water shut-off—and the taps don't work? You need to know **how to find water** and **how to make it safe**.

What Makes Water Unsafe?



Water isn't always safe to drink, even if it looks clean. Many city water sources can be filled with invisible dangers. These include:

- **Bacteria** (like *E. coli*) that can make you vomit or give you diarrhea
- **Viruses** that spread sickness
- **Chemicals** from cars, factories, or trash
- **Pollution** from roads, pipes, or sewers

Sometimes water that looks clear and still can carry tiny germs you can't see. That's why we always treat or boil water before we drink it unless it comes from a safe source like a properly maintained tap.

Where Can You Find Water in the City?



In an emergency, you can't always open a tap. But there are many hidden sources of water in cities – if you know where to look. Here are some ideas:

1. Rainwater

One of the best sources of clean water. You can collect it using:

- Buckets
- Plastic sheets
- Rooftop gutters and pipes

BUT: If rain falls on a dirty roof or surface, it can pick up germs and chemicals. So you still need to **filter and boil** it before drinking.

2. Rooftop run-off

Many buildings have sloped roofs and gutters that guide rain into pipes or onto the ground. You can place a clean bucket underneath to catch this run-off. The water will need to be filtered before it's safe to drink.

3. Toilet tank water (not the bowl!)

The tank behind the toilet contains clean water (used to flush). If you don't add chemicals to it, that water is usually safe to treat and drink.

4. Canned foods

The liquid inside canned fruits and vegetables is drinkable. Don't waste it! You can also use water-rich foods like cucumbers, tomatoes, or oranges.

 Avoid:

- Water with oil floating on top
- Water near roads, drains, or garbage
- Puddles (they collect bacteria)
- Water with strong smells or colors

What Is Rainwater Harvesting?



Rainwater harvesting is the process of collecting rain so you can use it later. It's an old method used in many countries around the world, especially where clean water is hard to find.

A simple rainwater collection system can include:

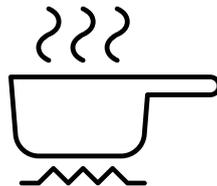
- A **roof** to catch the rain
- **Gutters and pipes** to guide the rain into a barrel
- A **bucket or large container** to collect it
- A **lid or net** to keep bugs and leaves out

This water can be used for:

- Drinking (only after filtering and boiling!)
- Washing hands or clothes
- Watering plants

Collecting rainwater helps reduce the need to use tap water and teaches you how to be more self-reliant.

How Do You Make Water Safe to Drink?

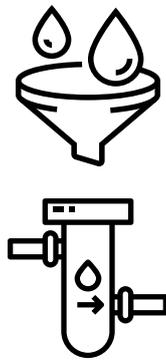


To make water safe, you have to do two things:

1. **Remove dirt and chemicals** (filtering)
2. **Kill germs** (boiling or purifying)

Let's start with **filtering**.

How to Build a DIY Water Filter



You can build a simple water filter at home using layers of natural materials. Here's how:

What you need:

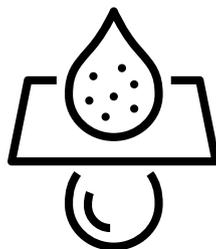
- *A plastic bottle (cut in half)*
- *Cloth or coffee filter*
- *Gravel (small stones)*
- *Sand*
- *Activated charcoal (or crushed charcoal from a fire)*

How to build it:

1. *Place the cloth at the bottom (this keeps materials from falling out).*
2. *Add a layer of **charcoal** – absorbs chemicals and bad smells.*
3. *Add **sand** – catches tiny dirt and grit.*
4. *Add **gravel** – catches big pieces like leaves or insects.*

Pour dirty water into the top and collect the filtered water from the bottom. It should look cleaner, but it's not fully safe yet.

Final Step: Boil or Purify



*Filtered water is clearer, but still might carry germs too small to see. That's why you must **boil the water** for at least 1 minute (or 3 minutes if you're in the mountains).*

Each layer in the filter has a job:

- **Gravel** traps big bits like leaves and bugs.
- **Sand** catches smaller particles like dirt or rust.
- **Charcoal** works like a sponge. It grabs chemicals, smells, and even some bacteria through a process called **adsorption** (not absorption—it clings to the surface!).

This method is used by scientists and survival experts all over the world.

You can also use:

- **Water purification tablets**
- **UV water pens**
- **Solar disinfection bags** (leave clear bottles in the sun for 6–8 hours)

Boiling is the most reliable method and doesn't require special tools—just heat.

Science Behind the Filter



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What You've Learned Today:



- *How to find water in a city during emergencies*

- *How to collect rainwater*
- *How to filter water using sand, gravel, and charcoal*
- *Why boiling or purifying water is so important*

*Water is precious, and knowing how to find and clean it can **save lives**. The more you practice, the more confident you'll become at staying safe—even in tricky situations.*