

Filtration: Clean Water By Design

Icebreaker: Belly-button or post it note animals guessing game

Materials:

- **Plastic water bottles (small)** – for the body of the filter
 - **Cotton balls** – for fine filtration and to block particles
 - **Desert sand soil cover** – for sediment and particulate removal
 - **Coffee filters** – for initial coarse filtration
 - **Activated carbon (Aqua-Tech)** – for removing odors, chemicals, and impurities
 - **(Optional) Knife or scissors** – to cut the bottles
 - **(Optional) Rubber band or string** – to secure the coffee filter
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DIY Water Filter Procedure:

1. Cut the Bottle

- Cut the bottom off the plastic water bottle (around $\frac{1}{3}$ of the way up).
- Turn it upside down like a funnel.

2. Layer the Filter (from bottom to top inside the bottle)

(This is the order the water will pass through)

1. Cotton Balls (base layer)

- Stuff 2–3 cotton balls into the neck of the bottle.
- Acts as the finest filter, catching small particles.

2. Activated Carbon Layer

- Add about 1–2 inches of the Aqua-Tech carbon.
- This removes odors, chlorine, and harmful chemicals.

3. **Sand Layer (Mosser Lee Desert Sand)**

- Pour in about 2 inches of sand.
- Helps remove fine sediments and turbidity.

4. **Coffee Filter (top layer)**

- Place a coffee filter at the mouth (wide end) of the bottle.
- Secure with a rubber band or hold in place while pouring water.
- This catches large particles/leaves before the finer filtration below.

To Use:

- Pour **dirty or cloudy water** through the top (coffee filter side).
- Let it **drip through all the layers**.
- Collect the filtered water from the neck of the bottle.