

### What happens to our water after we have used it?

After we have used water and it becomes "dirty", it is collected in the sewage system and referred to as wastewater. This wastewater is then put through a treatment process to filter out any items that should not be in water, before it is returned to nature to begin the water cycle from the beginning.

### The wastewater treatment process



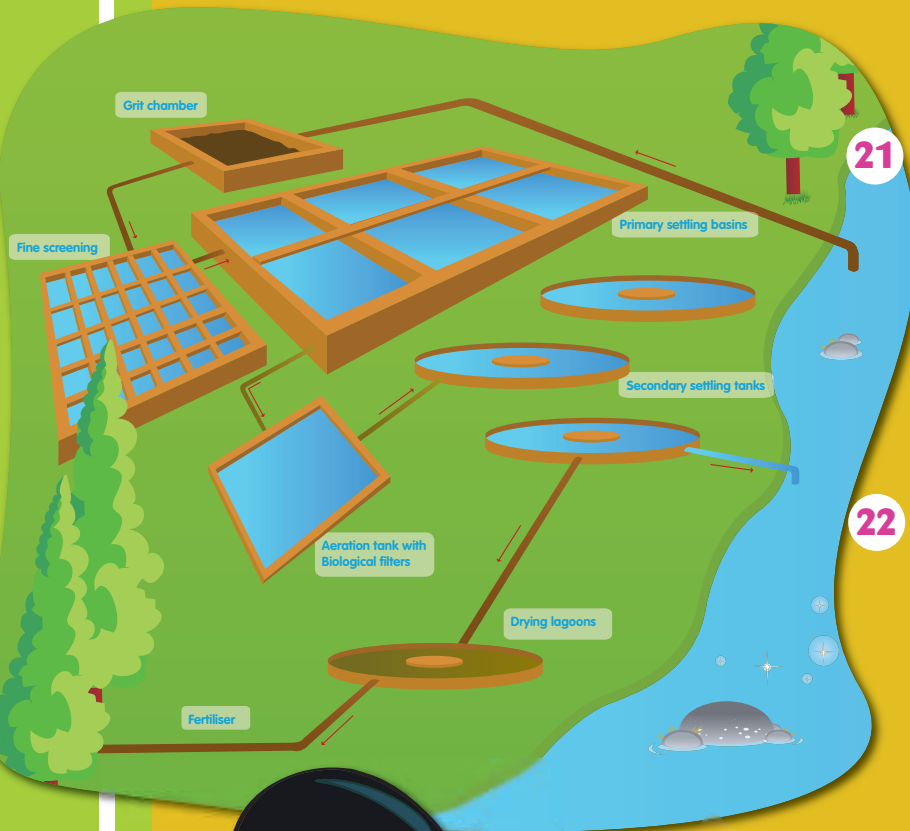
Once in the water treatment plant, wastewater undergoes a series of stages in which it is cleaned step-by-step. These stages are:

#### Primary treatment

- 20 Step 1:** Primary treatment involves physically removing debris and large particles from the wastewater in a process known as **fine screening**. As the wastewater flows through the screens, large items are ground up and filtered out for disposal.
- 21 Step 2:** Wastewater enters grit removal tanks, where heavy particles such as sand, gravel, seeds, and coffee grounds settle to the bottom by gravity. The wastewater then flows into the **primary settling basins**, where smaller particles settle out and oil and solids that float to the top are skimmed off by mechanical devices. This oil is used as gas for fires.

#### Secondary Treatment

- 22 Step 3:** Once solids and large particles are removed, the wastewater flows into large aeration basins, where air is injected to aid the growth of microorganisms that naturally live in wastewater and act as **biological filters**.
- Step 4:** The microorganisms, called **activated sludge**, clean the wastewater by digesting organic materials and other contaminants. Wastewater remains in the aeration basins for about three hours to allow time for the microorganisms to grow and consume the bacteria.
- 23 Step 5:** Wastewater enters basins called **secondary settling tanks**, where the activated sludge settles out of the water. The resulting sludge is transported into **drying lagoons**, to dry out and then moved to a landfill for disposal or to be turned into fertiliser.
- 24 Step 6:** Sodium hypochlorite is injected into the nearly clean water to kill any remaining bacteria, after which clean water is released back into the **natural water cycle**.



#### Saving tip

Save water and electricity by taking shorter showers and turning off the water while brushing your teeth.



Eskom

Powering your world