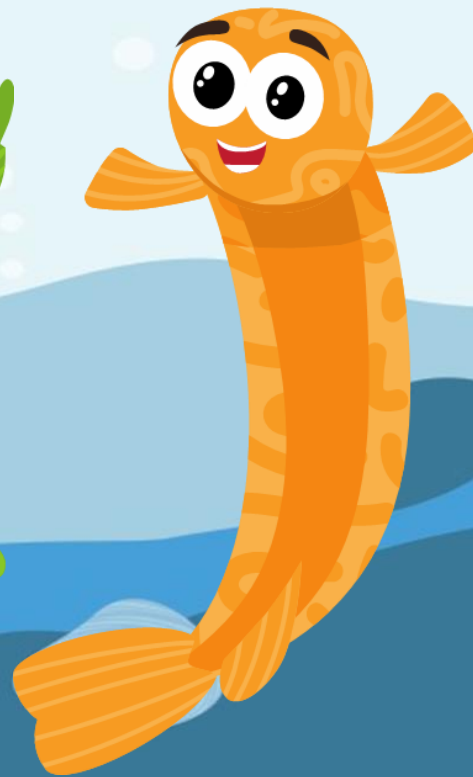


Three Waters Education

Hi I'm Ian the Inanga



I'm Koro the Kokopu



Wastewater treatment

What is wastewater?



We use water in many ways: we drink it, cook with it, wash things such as dishes and ourselves. We use it to flush our toilets and wash our clothes.

When we use water it gets dirty. This water leaves your home as 'wastewater', through your plumbing and into the wastewater network.



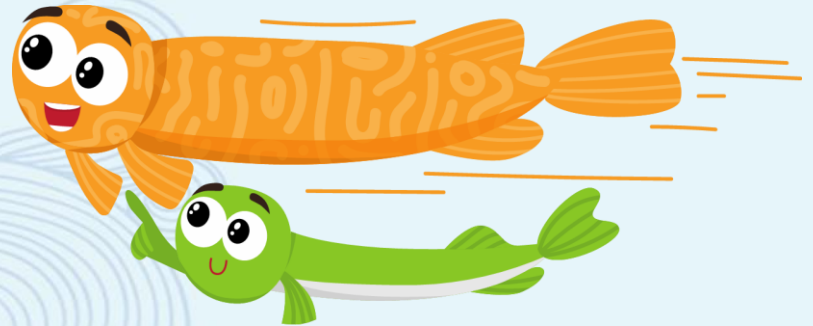
Where does wastewater come from

Bathroom: toilets, sinks, showers and baths.

Kitchen: waste disposals, sinks and dishwashers.

Laundry: washing machines and sinks.

Some people call it
sewage



Where does wastewater go?

Wastewater leaves your home through a gully trap and pipes under your property and goes into the wastewater network.

The wastewater goes through a series of small and large pipes and is pumped to the New Plymouth Wastewater Treatment Plant.

A compliant gully trap:



- is raised off the ground
- is covered by a grate



A non-compliant gully trap:



- is level with the ground



NEW PLYMOUTH WASTEWATER TREATMENT PROCESS



Pumping the wastewater



Pumps underground move wastewater along the pipes towards the wastewater treatment plant.

The pumps have a spinning portion which creates a vortex this moves the water along the pipes.

Sometimes rags, clothing and wetwipes get stuck in the pumps.

Screening

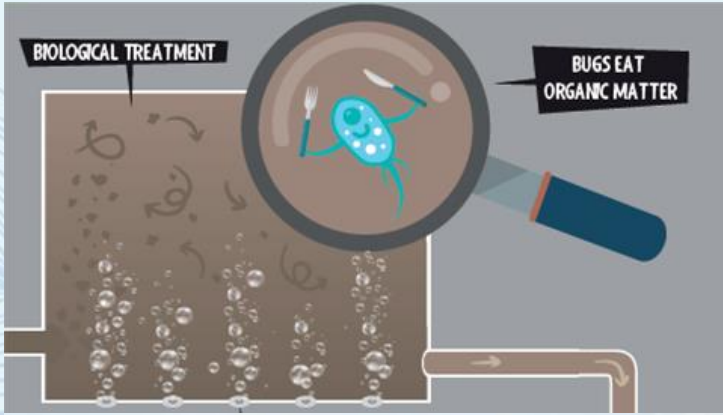


Wastewater first goes through 5mm screens to filter out the large solids in the wastewater, such as wet wipes, rags, food, plastic etc.

Liquid that flows through the screens goes into the treatment plant.

All of the rubbish and plastic is taken to the landfill

Biological treatment

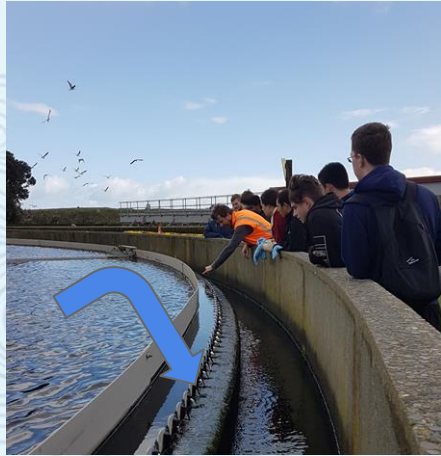
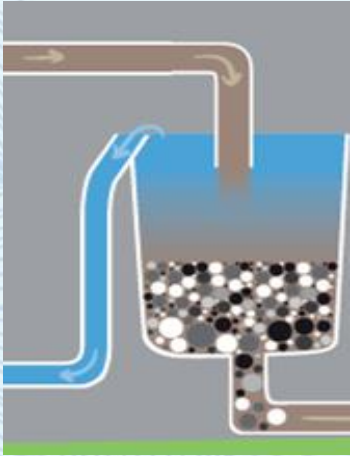


Tiny microscopic bugs eat the organic matter in the wastewater this is called biological treatment.

These helpful bugs are encouraged to grow and breed by adding oxygen.

There are lots of different types of microscopic bugs it is like a big farmyard

Clarifier

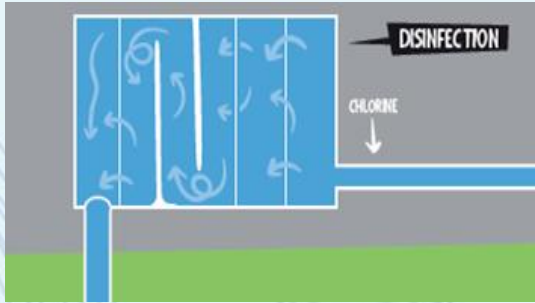


The tiny bugs are separated from the water in the clarifier.

The clusters of bugs are heavy and sink to the bottom of the clarifier while the clear water flows over the outside walls of the clarifier.

From here the bugs and the clear water go in different directions.

Disinfection



The clear water is then disinfected with chlorine to kill any remaining bugs.

The water flows through a maize for 15 minutes and is then tested to make sure it is clean.



The water then flows out a long pipe into the sea where it mixes with seawater.

Thermal drying



The bugs and sludge from the clarifiers are squeezed to remove remaining water and then put into a big oven called a thermal dryer this is how we make bioboost fertiliser.

Bioboost is a great fertiliser safe for use on all plants and gardens.

What should go down the toilet?



Pee, Poo and
Toilet Paper

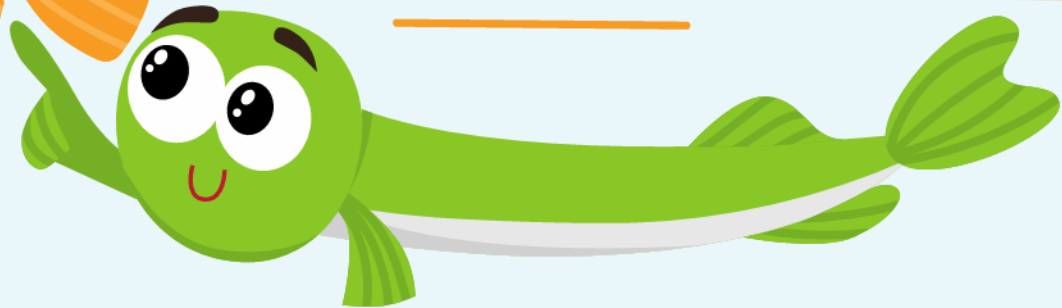


What can't go down the toilet or sink

- Wet wipes
- Floss, cotton buds/balls
- Nappies
- Paper towels
- Rubbish
- Rags
- Cooking fat or oil
- Sanitary products



Hope you enjoyed
learning about
wastewater!



Three
Waters
Education