



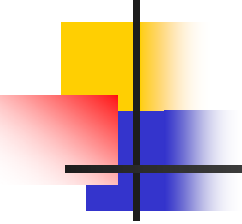
Sewage-treatment plant (poo cleaning factory)

A presentation by class 2EC
at Brinellskolan, Fagersta
October 2008

History

- Before 1975 we let out our poo in the nature. There were growing too many plants in the lake and the fishes were dying, in some lakes you could not even swim, like the lake "Mälaren". But at 1975 people started to clean the poo water and the other dirty waters.



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- Now, in present time, you can both swim and eat fish from Mälaren. Wast water is purified in a sewage treatment plant. At treatment plant, there are several steps the water will go through to become as clean as possible. There are even a law that says municipalities should have the treatment plants.



Visit to sewage plant in Fagersta, October 2008

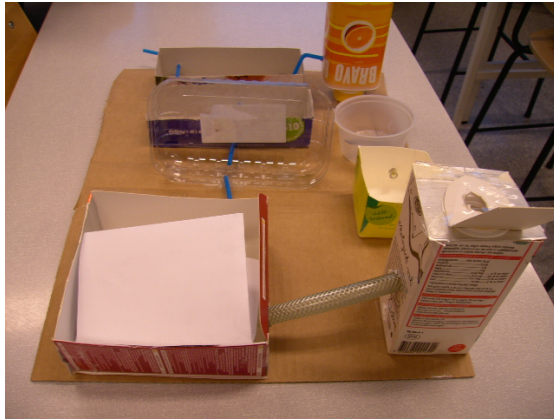




Facts

- 6 000 households are served
- 5 000 m³ water is cleaned every day
- That equals 3 swimmingpools!
- Every 20 m³ they take a test of the quality of the water they have cleaned

Building models of the plant in our classroom





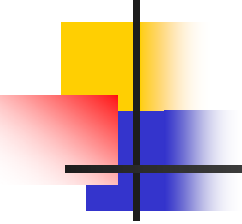
Three steps to clean the water

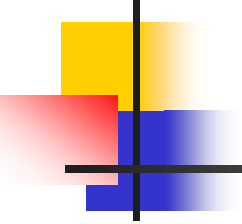
- Mechanical cleaning
- Biological cleaning
- Chemical cleaning



Mechanical cleaning

- Bigger objects will be separated from the water. Sand and grids are used.

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- In sandcatch maintains a steady water speed so that only sand and gravel will settle down but only a small amount of biological material. On several treatment plants also washed the separated sand to reduce the amount of organic material to the landfill.

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- In the grid you remove bigger parts as separated as toilet paper, plastic bags, tops, etc. Since the scraped waste of the grid and running to landfill or incineration. In recent years it became customary to wash the rest of the garbage in place to reduce the discharge volume.





Biological cleaning

- Air and bacteria will be added to the water. The bacteria consume the organic material. The air makes the bacteria maintain a good speed of growth.



Chemical cleaning

- Chemical compounds are added to bind to some of the sulphur that is still in the water.
- The chemical clusters separate and can be removed
- They often use $Al_2(SO_4)_3$
- In Fagersta they use iron sulphate, $Fe_2(SO_4)_3$



Source of the water

- Fagersta take their water from a ridge with pebbles in a lake called Viksviken
- Norberg also take their water from a ridge, but it is situated in a town 14 km away
- Some households use their own wells with groundwater



Remember!

- Do not throw anything in the drain but biological stuff
- Do not throw tobacco, medications, paint, gasoline etc.