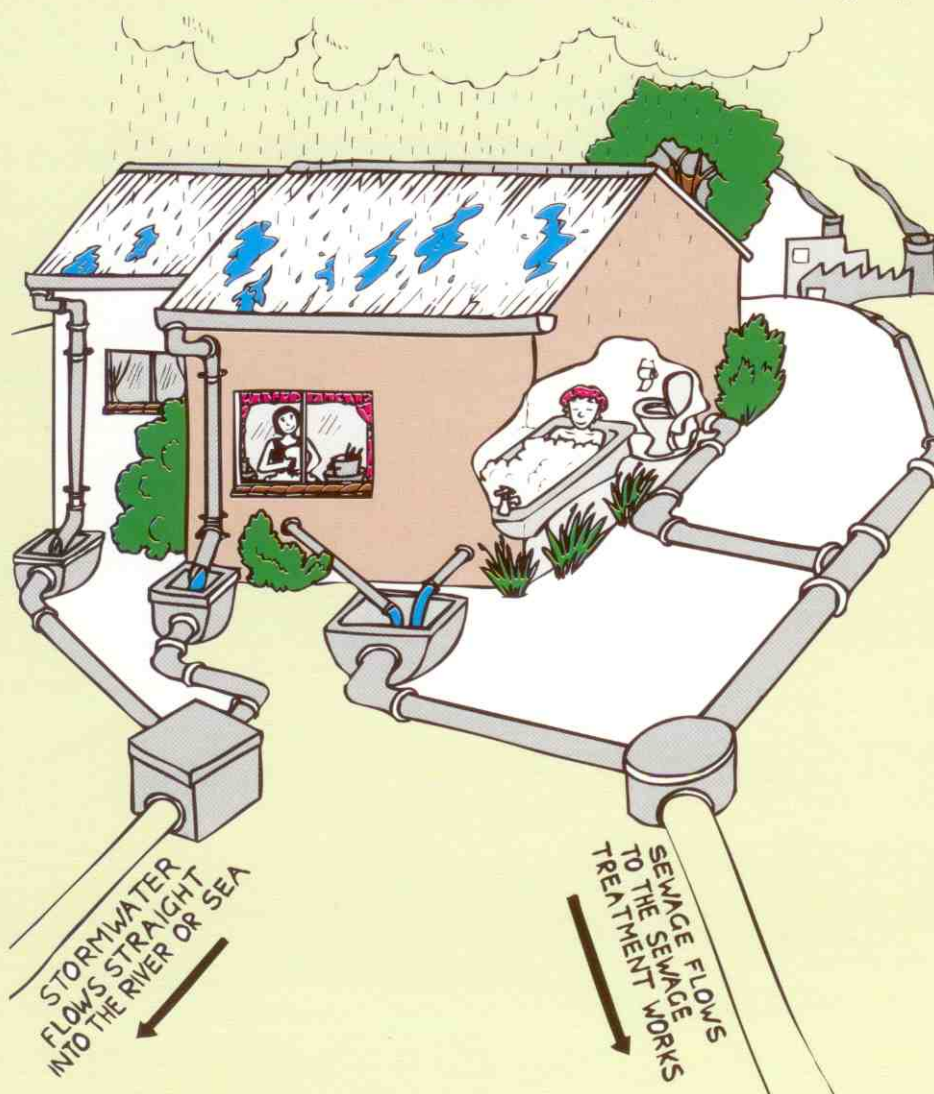


infosheet

PLUGHOLES, PIPES, DRAINS AND SEWERS

Drains are all around us. The ground, rivers and seas are natural drains. When people build houses, factories and streets, water cannot drain away naturally, so pipes and drains are built to do the job.

In Durban there are 2 separate drainage systems:



- The **waterborne sewerage** system carries used water from homes, schools, offices and factories. Over 5 500 km of pipes carry the used water to sewage treatment works for treatment before it is discharged back into the rivers and sea.

- The other is a stormwater system. Rainwater that runs off roofs, streets and pavements flows into stormwater drains. This is a 'straight through' system. Anything that moves along with the stormwater flows directly into the rivers or sea. It does not go through a treatment process.

It costs a lot of money to maintain and operate these sewage and stormwater systems.

VERY IMPORTANT!
Sewers and stormwater
drains must **NEVER EVER**
be joined!



SEWAGE IN INFORMAL AREAS



If it is not suitable to visit an informal area, invite a resident to come and address the class and answer learners' questions.

- Ask learners to conduct a **survey** of at least 5 houses in an informal settlement to find out what people do with their 'used' water. Learners should also establish whether toilets are available, what sort of toilets these are and whether the people actually use them.

It may be useful to draw up a questionnaire with the learners. Here are some ideas of what you may wish to ask:

House 3

- What happens to water used for cooking? _____
- What happens to water used for washing dishes? _____
- What happens to water used for washing clothes? _____
- What happens to water used for washing people? _____
- Are toilets available? _____
 - if yes, what type? _____
 - if no, where do people defecate / urinate? _____
- Does everyone use the toilets? _____
 - if no - who doesn't? _____
 - why not? _____
- Does the family get sick often? _____
 - if yes, who gets sick the most? _____

- Arrange for the class to share their findings and to write up a paragraph on sewage disposal in an informal settlement. The learners should also comment on their findings and suggest what can be done to solve some of the problems.



DIFFERENT DRAINS

Introduction

- Using the poster 'Stormwater drains and sewers' which can be found in the pocket in the back of this file, present a participative lesson on the 2 different drainage systems operating in the Durban Metropolitan Area.



Participate in the
'Adopt-A-Drain Project'
which is run by the
Keep Durban
Beautiful Association and
The Daily News.
phone 3681587 for
more details.

stormwater drains

- Ask learners to brainstorm a list of all the litter and other materials that are found on the roads, verges and pavements that could get washed into the stormwater drains. Remind them that this is a straight-through system. Everything lands up in the rivers or in the sea! Ask learners to discuss why this is a problem.
- Photocopy and hand out the sheet entitled "If the River Could Speak". Ask learners to complete and colour the drawing of the stormwater outlet by adding in all the rubbish that was identified in the above activity. Have them write a short poem or essay using the suggested heading.

sewage pipes and sewers

- Learners could build a model of a house drain such as a kitchen sink or bath, leading into a street sewer. Any range of materials could be used, including recyclable waste (cooldrink bottles, cans, plastic), drinking straws, prestick and plaster of paris.



Learners could ask permission from their local council to paint logos onto the street stormwater drains.

- eg. • **THIS DRAIN IS ONLY FOR RAIN!**
• **DRAINS TO BUY!**
• **DUMP NO WASTE, DRAINS TO RIVER!**



“IF THE RIVER COULD SPEAK!”



MY SEWERAGE AND STORMWATER MAP

- Ask learners to find all the plugholes, sewage pipes and stormwater drains at their houses. They should investigate where each one starts and finishes and what job it is doing.
- Ask learners to count the total number of sewage pipes that are needed to take sewage away from the house.
- Ask learners to count the total number of stormwater pipes that are needed to take stormwater away from the house.
- Ask learners to measure the circumference of these pipes using a piece of string which is then measured against a ruler.
- Ask learners to locate and measure the distance between the stormwater drains along the sides of the road. They should also measure the distance between their houses and the closest sewage manhole.
- Ask learners to locate and measure the distance between stormwater manholes in the street stormwater drains and the . They should also measure the distance between their houses and the closest stormwater manhole.
- Ask learners to draw a map showing the position of their house in relation to the closest sewage manhole, and the position of the sewage pipes. They should also include their stormwater drains and closest stormwater manhole. It would be preferable to use a different colour for each of the two systems.

