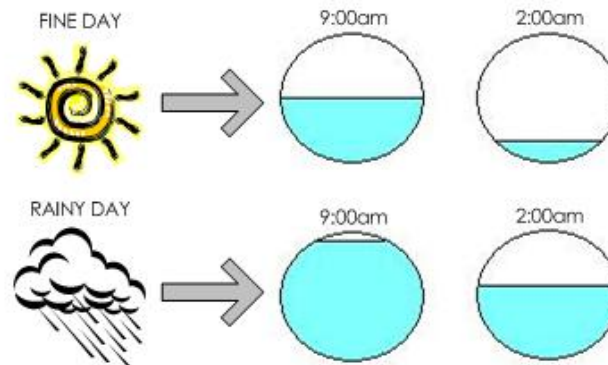


Activity 11

Inflow and infiltration

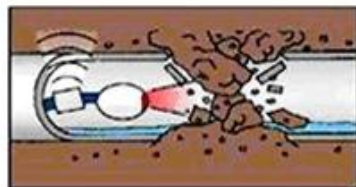
Infiltration is when rainwater soaks through the ground and leaks into the wastewater pipes. This is a HUGE problem because it costs so much to treat wastewater.

The wastewater system carries more in the mornings. This is the time of day when lots of water is used. People have showers, flush toilets and turn on washing machines. People don't usually do these things in the middle of the night so the wastewater flow is much less then. However, when it has been raining, the flow is much MUCH more because of **infiltration** – rainwater that leaks into the system. In times of floods and cloudbursts, too much rain leaks into the system and it overflows. These overflows are a serious threat to public health and to the environment.

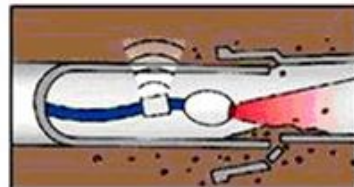


So how does rainwater get into the wastewater pipes?

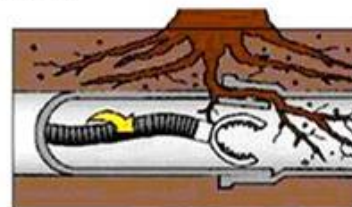
Follow our camera as it investigates some of the problems wastewater pipes can have...



Sometimes pipes collapse under the pressure of heavy vehicles, or old age, and rainwater leaks into the system...

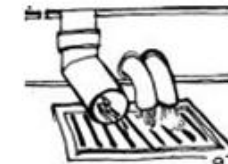


...and clay soils shrink and expand and shift the pipes so that the joints no longer meet and water pours in.



This is a really common problem, tree roots crack open the pipes and water leaks in. These roots have to be cut out.

Inflow is when for some silly reason, people send their stormwater into the wastewater system. And inflow happens when wastewater gully traps are so low that stormwater just pours into them:



Infiltration and inflow combine to cause wastewater overflows from manholes, toilets and even sinks! This is a major public health risk.



Make a presentation to the class about inflow and infiltration. Here is how you will be marked:

1. Explain inflow and infiltration (20 marks)
2. Say why it is such a serious problem for Gisborne (25 marks)
3. Describe causes of inflow and infiltration (25 marks)
4. Clarity of presentation (15 marks)
5. Use of visual aids (15 marks)