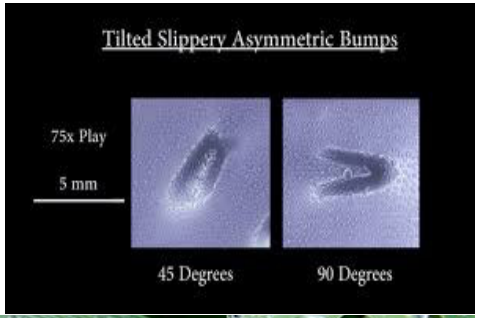
# WATER

It is important to think about the environment and help in sustainability. Roof top farming is beneficial to the environment in many ways. It can help save and generate energy and also help in rainwater collection by absorption the water by the plants. Apart from decorative benefits, rooftop farming provides food, temperature control, recreational opportunities and various ecological benefits. They serve as a source of empowerment for the community whilst reducing the economic footprint and increasing opportunities for investment. Since these plants reduce the levels of heat absorption, they in turn reduce energy consumption and cool cities during hotter months leading to energy efficiency. They also collect rainwater, reducing the run off over the land and ultimately into the lakes and rivers. By capturing airborne pollutants and filtering gases, they improve the air quality.




The asymmetric topography of the material guides the droplets to the bump. Each plant such as cactus and pitcher plants has their own way to collect the droplets of water. The leaves of such plant have tiny pores through which the water gets collected at the same time the leaves are positioned in such a way that it guides the water to the narrow deep part of the plants. The plants take in $CO_2$ through the help of the surface of the leaves. The $CO_2$ helps the plants generate food. Through the pores called stomata plants take in $CO_2$ for photosynthesis and they give off water through the stomata in process of evapotranspiration, which cools the plants The bacteria in the roots can help filter pollutants from not only water but also air. Phytoremediation is the process of cleaning the pollutants from soil.


**Mind map**

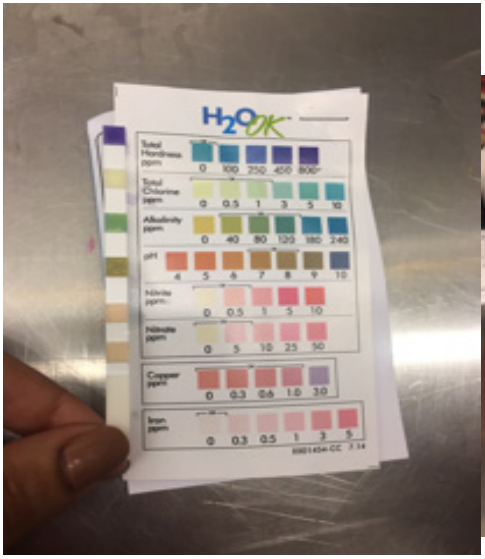
This is a mind map of the words and alliterations i noted down while seeing the movie “Growing cities”. I also jotted down other related words i knew and made few small drawings around it for better understanding

**Water testing:**

The water we tested was from next to the Buttermilk channel. It was collected from the circle line. We tested various elements such as hardness of water, chlorine level, alkalinity, PH level, nitrate, nitrite, iron and the copper level in the water. As the water was collected next to the buttermilk channel we expected high levels of hardness of the consuming elements in water and low levels of PH because of less acidity in the river.

| Elements | Buttermilk channel |
|---|---|
| Hardness | 800 |
| Chlorine | 0.5 |
| Alkaline | 80 |
| PH | 9 |
| Nitrate | 5 |
| Nitrite | 5 |
| Iron | 0 |
| Copper | 0.3 |

Through this testing we got to know that the water we tested was rough and hard as it appeared to be 800+. The results turned out to be as we expected that is the PH level was low and the hardness was high. Metals such copper iron and chlorine are low in the water whites good for the living organisms and is fit for drinking after processing. The alkaline level is perfect for the water. The nitrate and the nitrite levels are very high in the buttermilk channel compared to the places where the water was collected and tested. This is because of the high produce of buttermilk. These results could be different if the main produce of a particular factory varied.




**Soil testing:**

| Elements | Union Square Park | Washington Square Park | Stuyveasent park | Brooklyn |
|---|---|---|---|---|
| **Potassium** | Low | Low | High | Low |
| **Nitogen** | High | Low | High | High |
| **PH Level** | High | High | Low | Low |

We collected soil from different locations such as Brooklyn, Union square park, Stuyveasent park and Washington square park. Each collected soil samples were different and showed different levels of elements. we expected different results for each as they are from different areas with the surrounding activities also different.We added capsule powder to the small samples to test the nitrogen and the PH level in the soil. After putting the soil we let the soil rest fro a while and we could see the clear colour different in each which shows the potassium, nitrogen and the PH level. After the soil testing I realised that all the Soil samples were different and each slowly changed there colour differently. I thought that the results would be the same for all as these are soil samples from Manhattan itself but each area had a different surrounding and work processes. In conclusion no soil was perfect for growth of organic and palatable crops. If these soil were taken from locations which did not have fast activities around or had less factories and buildings the soil would be perfect for the growth of the plats. Th nitrogen level was high in three locations which is good as the plants require it for photosynthesis. The Ph level were equal and the potassium was low in most of the location which again is not fit for the plant growth.