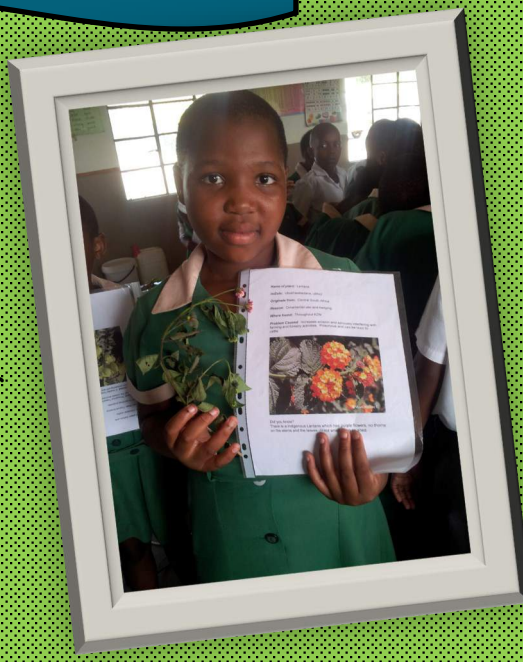
Permacultural Lessons

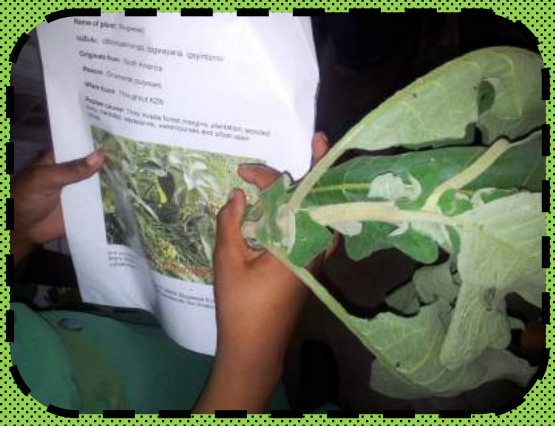
Valentines is the day of love and this year the Crystal Springs gardening team, the Water Legends will commit their love, passion and desire for healthy water wise food with the start of a permaculture garden. Fortunately, Crystal Springs school is blessed with fertile soils and have a perfect place to start a garden. The fenced perimeters will help defend the garden from marauding goats who also like their untitled share of the tasty treats.

We started the day with a very interactive session with Water Explorer coordinator, Julia Colvin. The Grade 4 class was asked to evaluate different types of soil, sandy, clay and loam as a substance in which we can grow healthy vegetables. We looked at the process of how soil is made and were astounded to learn that 3cm of top organic fertile soil can take 100 years to create; yet annually South Africa losses 400 million tons of top soils through poor agricultural techniques and bad land management. We then looked at how to build a compost heap to enrich our soils with nutritious organic material for the plants to feed. Conducting an experiment using hydrogen peroxide, a chemical that produces a foamy reactions when in contract with organic material, we were visually able to compare the organic material in loamy soils as compared to the poor sandy soils. In this activities we learned how to conduct an experiment by controlling for variables in order to prove or disprove our hypothesis. Most of the children hedged their bets on loamy soils creating a foamier reaction when in contact with hydrogen peroxide. They were correct. Being a water wise school, we were impressed to see how loamy soil are not only a rich feeding ground for plants and many beneficial animals that live in the soil, we also learned that loamy soils organic material hold water better than clay or sand decreasing the amount of water needed to irrigate our plants. Being true to our permacultural ethics of people and earth care, we then looked at ways we could conserve and look after our finite natural resources like water and soil. In a small experiment, Julia showed how to mulch our soils with dry hay to protect our soils from erosion and evaporation and create a nice warm, moist environment where all the good guys like worms and decomposing bacteria want to hang out. One boy, Samkelo Mofokeng commented that earthworms strongly dislike being showered with soapy water. Now that he understands the ecological significance of earthworm, hopefully he will take greater care.

Alien Invasive Lesson



Today lesson was a unique South African challenge looking at the problems of alien invasive plants. Do you know that out of our 2000 alien plants from other countries, only 10% are considered invasive. Invasive Alien Plants IAP's, not only take over an area and rob native plants from sunlight, soil and space, they also are incredibly thirsty drinking gallons and gallons of precious fresh water a day. In KZN alone, alien plants drink three times the capacity of Midmar, that's a major water source for PMB and Durban. Using ID book and pamphlets and general knowledges, learners learnt to identify different types of alien plants and distinguish common indigenous verse alien plants.



We then discussed how unlike our indigenous plant which are adapted to conserving water in dry conditions, whilst Alien plants grow rampantly devouring our water. We then did a scavenger hunt to explore the school ground for plants using differing ID features. We finished the day making alien plant awareness posters to share this invaluable information with others.

Water Aquifers and Mini SASS Lesson

In todays lesson we learned about where our water comes from. We learnt that most of our fresh water is found underground in the water table. This is not only a valuable source of fresh water, the water table plays an important role in the water cycle. Without underground water our river will dry up in the Winter when there is little rain. The Midlands is known as a water factory as the springs and streams provide for the needs of 6 million people down stream. We then looked at how people in the past managed to extract water from undergroud using windmills, the Archimedes screw and hand pumps. In a technology lesson we got to make our own model of a hand pump to better understand scientific concepts of gravity and equilibrium.

After learning about water quality and river health through a story and role play, six members from the eco-committe went to the nearby Lions river on the Caversham road to do a mini SASS. The river after the recent rains was extremely high so it was difficult to sample. We found bugs and mayfly and scored the river a respectable 8- natural and in good condition. I also taught the children about turbidity and allowed them to compare the difference in clarity between tap water and the river water. Whilst with tap water, the rubber stopper in the clarity tube was 100cm, the river water showed a clarity of 42cm. This was a good opportunity to discuss soil erosion-another pertinent environmental issue