

Sadly this is the last week for the garden's math and science program for this school year. This week's lesson was on insects and pest management. As you know we do not use commercially synthesized pesticides. Why is that? In general most of these commercially synthesized pesticides are general purpose, that is they are not selective for what they kill. As we have been learning eliminating all insects / pests is detrimental (causing harm) to our survival, take for instance pollinators like the bee. Do you recall our saying approximately 33% of our food is the result of pollinators like the bee. So if we kill all those insects that are annoying we are upsetting the balance of nature and eliminating 1/3 of our food source. Nature's approach to pest control is to favor a pest that is a predator to a pest. In class we talked about insects, their metamorphosis, and whether all insects are bad... We practice Integrated-Pest Management. Do you remember what that means. Integrated Pest Management is an organic approach that integrates both naturally occurring chemicals and non-chemical practices for control of pests. Examples of this approach can take the form of an extracted chemical such as neem oil (cold pressed oil from the seeds of the Neem tree) used to control insect eggs and larvae, or a bacterium (*Bacillus Thuringiensis*) that is used against caterpillars and insect larvae e.g. mosquito larvae, and of course there is the pest or natural predator that feeds off the pest you wish to control. These are the ways that nature maintains a BALANCE! It is possible to cause a pest problem by killing off a predator that is already controlling a pest (an example might be the killing off ladybugs (lady beetles) with a non-selective pesticide when trying to get rid of aphids.) One last point, that which is labeled a pesticide is sometime also harmful to humans – not to be too puny... this can be a deadly business in a number of ways.

This week we worked hard to get all our potatoes harvested. Can anyone guess how many pounds of beautiful red potatoes we harvested? We harvested 219 pounds of red potatoes from our gardens (A1 and O2). In 2022, we didn't have a white potato crop due to seed potato issues and weather and the year before we had an average crop of172 pounds of white potatoes. So this year we had a pretty solid crop, the potatoes were good size and very little pest damage. Do you see the value to keeping a record of our observations? That is one of the benefits of a scientific approach, recording when you planted what you did when you planted, how many times you fertilized, hilled the potatoes, and at the end the reward..... 219 pounds identifies variables and when compared against other years, you get to identify what works and what doesn't. Believe it or not but the sweet potatoes which some of you got to plant will probably do better. In past we have harvested 500 – 600 pounds of sweet potatoes. In the past the students have planted the sweet potatoes and the next class gets to harvest them. That is neat a "pay it forward" act by the previous class. White potatoes don't do well in the summer but sweet potatoes do so what a nice start to the year for the next class!

One final note, this year we harvest over a ton of vegetables from our gardens. But in 2020 we harvest 3641 pounds of vegetables and this year we only harvested 2051 pounds of vegetables. The question is why the difference? Was the weather better in 2019-2020? Well part of the answer is we didn't have citrus to harvest this year and we did in 2020. We harvest 762 pounds of citrus in 2019-2020. If we subtract the citrus from the 3641, we harvest 2879 pounds of vegetables only in 2020. Now the numbers are more reasonable. We still didn't do as well as 2020 but we were much closer. How much closer you ask? Well I'm going to let you do the math!

I want to say that we have really enjoyed working with you all throughout this year. You have been industrious and enthusiastic contributors and have made the gardening experience a lot of fun for us all. I hope as the years roll by you will look back on this time as a fun and a valuable learning experience. You got to try new vegetables, use garden tools, experiment with compost tea, evaluate the garden's soil characteristics (sand, silt, and clay), and learn about gardening. You had a chance to develop your understanding of gardening including bed preparation, planting, fertilizing, and harvesting. And through it all you developed a scientific appreciation of gardening. And although you may not have appreciated it you did some scientific experimentation in the gardens and used your mathematical skills throughout the year. You did a LOT!!!!!!

Finally, I want to thank you all and to wish you all a very happy and fun-filled summer.

Be Safe,