

## Eco-Warriors Summer Camp

The 'M' in S.T.E.A.M (Science, Technology, Engineering, Arts, Math) can often be overlooked and underappreciated. Mathematics has a reputation, especially among children, to be a boring and difficult subject. Incorporating the topic into the Eco-Warriors Summer Camp this year, however, was not only easy and relevant it was inevitable. During this camp, I was invited to teach the students for three days. The group successfully learned how often mathematical concepts are used in design, without even realizing it!

The subject of symmetry was explained during our wildlife walk around town, and the students very quickly became experts at identifying symmetry in nature. In flowers, in bark, in the flowing stream of the river, on the famous bridge, even in the dirt, the students began to find, document, draw and then add watercolor to the mathematical symmetries they found all around them. The students took what they learned outside and brought it back with them into the visual arts room, where they learned about the concept of a central focal point and dimensions. After drawing two-dimensional symmetrical designs with a focal point (inspired by the nature we saw outside), the students turned them into a three-dimensional design, by painting their work onto the stones they found and gathered by the river with acrylic paints.

The mathematical and artistic inspiration learned in the beginning half of the week was then used when the students were asked to design and build models of inventions that would benefit the eco-system and the nature we had been admiring. The group was extremely creative and came up with ideas ranging from 'The Grabber Grabber Trash Picker-Upper 2000', a device that picks up trash and then converts it into Legos for children, to the 'SeaBot', an invention that floats in the ocean and converts dirty air into clean water. The point of this activity was to get the kids started on an idea, excited about their model, and then encourage them to continue the process of researching the science and technology needed, so they can successfully build a prototype of their invention at home with their family and friends. Several older students even took it upon themselves to form a 'study group', for when camp was over, so they could research the required engineering needed together.

On the last day, each student had the chance to present their invention to the rest of the group. The eco-warriors, to my surprise, were so interested in each other's work, that they started asking hard questions about each presenter's model. They very organically started to challenge one another and did so in an exceptionally respectful way. It was moving to see these young up and coming inventors critiquing and complimenting one another. They created a true sense of collaboration and innovation which is exactly what S.T.E.A.M summer camp is all about!

Till next time,

- Abra O'Leary - Innovate Canmore Ambassador Program Coordinator