

# Faculty Innovation Grant 2021-2022 Courtyard Horticulture

Recipients: Matt Gallon, Andrew Beal, and Jared Smith  
The Brimmer & May School  
May 2022



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## Courtyard Horticulture

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### Overview:

This grant allowed for the creation of four outdoor garden beds, two of which are placed in the Waintrup Courtyard. These beds will be used to grow vegetables and flowers during the peak growing seasons as well as plants that will be used in an educational capacity during the beginning and end of the school years. The beds will be used in the 7<sup>th</sup> grade science classrooms to design experiments for photosynthesis in tandem with the indoor tower gardens in the Anne C. Reenstierna Library. They will also be used to investigate soil layers by the 6<sup>th</sup> grade science classroom who will participate in the selection and planting of seedlings in the garden. The garden beds provide additional greenery to the courtyard and further construction of the additional two beds will additionally enhance the Brimmer & May campus.

### Materials:

With this grant we were able to purchase the following:

One Time Purchases	Annual Purchases
<ul style="list-style-type: none"><li>• Raised garden beds</li><li>• Drip irrigation system &amp; timers</li><li>• Marble chips</li><li>• Top soil</li></ul>	<ul style="list-style-type: none"><li>• Seeds from Johnny's Selected Seeds</li><li>• Seed starter soil &amp; flats</li><li>• Additional top soil &amp; mulch</li><li>• Seedlings from Natick Community Organic Farm</li></ul>

## Seed List

The following seeds were purchased for the use in the courtyard garden beds. Some seeds were used in the indoor tower gardens. Sufficient seeds were purchased for use in the 2022-2023 school year with some replenishment required

- Corinto Organic (F1) Cucumber Seed
- Angela (F1) Eggplant Seed
- Arugula (Standard) Salad Seed
- Red Russian Kale Seed
- Salanova Green Butter Pelleted Lettuce Seed
- Truchas Organic Lettuce Seed
- Monte Carlo Pelleted Lettuce Seed
- Easter Egg Radish Seed
- Auroch (F1) Spinach Seed
- Sakura Organic (F1) Tomato Seed
- Sweet Thai Organic Basil Seed
- Genovese Organic Basil Seed
- Teddy Dill Seed
- Common Mint Herb Seed
- Dolores Chive Seed
- German Winter Organic Thyme Seed
- Chard & Beet, Rainbow Sprinkles Mix Organic Microgreen Seed



## Implementation

The raised beds were delivered at the start of the school year and initial construction was done by Andrew Beal, Matt Gallon, and Jared Smith. It was decided that two would be built and placed in the courtyard as an initial trial before deciding on the location for the other two beds. After the frames of the beds were constructed marble chips and top soil was ordered to be placed into the beds. An initial layer of chips was placed down for drainage followed by the top soil. The Upper School Community Service Club aided in the transportation and addition of the top soil.



Once the beds had been set up initial test plantings were performed in the fall. This was done with the assistance of a small group of 6<sup>th</sup> grade middle schoolers as part of a MS gardening club. They helped to start seedlings indoors. This trial was to ensure the plants would receive enough sunlight in the courtyard.

In the spring the 6<sup>th</sup> graders began a unit on soil, which included an investigation of topsoil and the different layers of soil. The 6<sup>th</sup> graders conduct an experiment growing grass seed under varying conditions. The topsoil of the gardens was used as an example of a rich layer of topsoil and the students investigated the differences in soil composition.



In addition, the 6<sup>th</sup> graders visited the Natick Organic Community Farm as part of Brimmer's longstanding relationship with the farm. While there they selected young plants to be purchased. They then assisted in planting the seedlings that they purchased including marigold, lettuce, and parsley.

This year the 7<sup>th</sup> grade science curriculum included an extensive unit on photosynthesis and plant growth. This involved an experimental setup using the tower gardens in the library. As part of this unit the 7<sup>th</sup> grade classes visited the beds and discussed the differences between plants growing in soil versus hydroponic plant growth. The students investigated how plants were grown in the absence of soil and the source of plants mass.

## Impact

The courtyard raised garden beds have not only contributed to hands on learning experiences for the MS science classroom, but they have contributed to beautifying the courtyard adjacent to the library. Children are consistently finding reasons to be outside in the courtyard during study hall or break, either sitting under the covered tables and working or simply enjoying being outdoors. Especially during the spring gardening season as plants have continued to grow, children are consistently asking about what is being grown and if they can pick some. Before the end of the year there will be lettuce and kale harvested that will be able to be incorporated into the school lunch where kids will see the food that they helped to plant become a part of their meal.

## Sustainability & Future Progression

The gardens will require consistent and seasonal care. Mr. Smith will prepare seedlings indoors for transplantation, similar to the preparation of seedlings for the tower gardens. Over the summer the responsibility for the beds will be shared and vegetables and plants will consistently be growing for the start of the school year in the fall.

Future curricular interests include a greater incorporation into the photosynthesis unit in 7<sup>th</sup> grade science. Students will be able to grow plants in the tower gardens as well as the outdoor beds and compare differences in pH of water versus pH of soil as well as control variables such as water and nutrient availability.

In the spring semester a gardening club will be able to help prepare the beds and place new topsoil if needed. They can also assist in preparing seedlings, setting up the drip irrigation system, and caring and maintaining the beds. The costs for these items as well as future seed purchases can be sourced from the science department operating budget.

The two remaining beds will be built and placed on campus with consideration from the heads of school. There was discussion about placing them on the field, however that is no longer an option. The plan for their placement will have to be revisited.

## Expenses

Item	Cost
Raised Beds	\$3876
Irrigation System	\$169.64
Seed Starter medium and flats	\$72.19
Seeds	\$257.73
Soil	\$1199.4
Marble Chips	\$199.8
Total:	\$5774.76