RAINGARDEN MAINTENANCE

Purpose & Goals

To sustain a school raingarden as an active learning space. Students learn plant needs for growth and survival, learn core watershed principles, and participate in a service learning project. This activity fits well with the VLAWMO raingarden plant cards activities, and also encourages active outdoor lifestyles.

Goal: To keep the school's raingarden functional and looking great so that it's usable for other classroom activities. Students will be able to recite at least 2 benefits the raingarden has for water and people.

Standards

Time: 45-50 **Grades:** K-12

STEM Science: 1.1.1.1.2., 1.4.3.1.1., 2.4.1.1.1., 2.4.2.1.1., 2.4.3.1.1., 3.1.1.2.3., 3.1.3.2.2., 3.2.1.1.1., 3.4.1.1.2., 3.4.3.2.1., 3.4.3.2.2., 4.3.2.3.1., 5.1.3.2.1., 5.4.2.1.1., 5.4.1.1.1., 5.4.2.1.2., 5.4.4.1.1., 7.4.2.1.1., 9.1.3.2.1.

Preparation & Materials

- Gardening gloves
- Plastic garbage bags
- Recycled milk jugs (3-5) for collecting seeds.
- Wheelbarrow
- Trailer or agreed method of brush disposal between school and grounds staff. Example: Park a trailer on site for students to put plant debris into, and have staff pick it up at the end of the day after maintenance takes place.
- Trowels and hand-held weeding tools
- Water for refreshments
- Sunscreen
- Wear closed-toed shoes and long pants
- Have first aid on hand, proper equipment, and allergy awareness in the case of bee stings (mostly applicable to fall maintenance).

Procedure

Understanding the needs of a raingarden:

Raingardens and native plantings do require maintenance, but fortunately with care, it gets easier over time. Native plants don't need fertilizers, winter protection, or irrigation. They're adapted to the climate and soils, handling excessive heat, deep cold, drought, and flooding.

The first two years after planting require the most care because the plants need to get established. If maintenance is prioritized, the garden will be more low-maintenance and self-sufficient in the years to come. In the first year, they need regular watering for quality root development. Deep, thorough irrigation or sprinkler watering is recommended opposed to short sprinkles of water. This can be arranged in partnership with school grounds staff.

Pull weeds to reduce competition for space, light, and water. Most weeds are pioneer species, which means they can quickly crowd out the slower native plants. Weeds also give the garden a messy, unkept appearance. A three-inch layer of mulch helps control these uninvited species. In the first few years, adding mulch annually is beneficial for the garden because it covers bare soil and maintains a weed barrier.

Much of the maintenance for raingardens occurs in the late Spring/early Summer. A few strategies include:

- **Divide the maintenance into stages.** In early/late April, bring students out to the raingarden just to clear dead debris from last year (plant material is valuable wildlife habitat over the winter). This reduces the amount of work that needs to be done once weeds start growing in May. The next visit to the garden is then focused on weeding. Classrooms may choose to share these tasks to spread out the work and allow more students to engage with the raingarden.
- Enlist staff and parent volunteers during the summer to monitor, weed, and water the raingarden. Summer school programs, scout groups, or local master gardeners or water stewards may be willing to help lead a volunteer day. Seek a planned, specific date for best attendance. For best results, we recommend one June and one late July/August weeding to target both early and late summer weed species.
- Classes may also visit the raingarden in the fall. If summer weeding took place, fall visits are brief and serve primarily to keep familiarity and awareness of the raingarden for the students. If the school chooses, dead debris may be cleared out in the late fall to help expedite Spring maintenance (although this detracts from winter habitat and pollinators that bore into stems to lay eggs). Fall is also a great time for art classes to draw flowers or do seed collecting. Seeds can be used for art (seed bombs or paper making with seeds embedded), or students may take them home to plant them elsewhere.

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Procedure continued

For a successful raingarden, these guiding questions serve to build a community around the raingarden:

- To what degree does the community value an outdoor learning space? Is the value level high enough to support a physical project long term? What will students to take away from the raingarden?
- Who at the school is willing and able to organize maintenance? On a teacher level? Parent level?
- How will raingarden maintenance and education fit into the broader picture of standards and curriculum? VLAWMO has recommendations for how the raingarden serves as an opportunity for STEM education, but teachers are also encouraged to apply creativity in establishing practical, unique was to utilize the raingarden. Raingardens hold potential to supplement science, art, team and character development, health and wellness, and more. VLAWMO is excited and interested to be a part of this ongoing effort.

On-site Maintenance Description

Year 1

Watering: For the first three weeks after planting, water the raingarden once/week. If one inch of rain accumulates naturally, watering isn't necessary. Water the garden during mid/late summer periods of drought.
Weeding: First identify what is a weed and what is a raingarden plant. Utilize VLAWMO for assistance when needed. Raingarden plants may be marked with planting stakes, and a pulling a display of one of each weed helps students visualize the variety and see all weeds at once. Once the weeds are identified, assign a specific weed for each student or group of students to hand pull. This helps ensure only weeds are pulled. Take time to have students look closely at the weed to be come familiar with the leaf shape, height, and other noteworthy features. Explain how to be cautious around thistles (use a trowel, wear long sleeves and gloves, and grab stems in an upward motion from the base to the top, similar to spikes on a sunfish).
Teach students to pull weeds slowly to pull as much of the root as possible.
Remove weeds carefully and tread slowly and lightly so as not to disturb raingarden species. Pull from the best of the plant, and use trowels in a downward/diagonal motion (opposed to digging 90 degrees and prying, which bends the shovel).
Weeding is easiest when it's done early - keep an eye on the raingarden to monitor this balance in timing.
Trees may need trowels or larger shovels to dig out.

Year 2

In spring when new growth begins, cut off dead plant material. This is best done with pruners, however some types of plants break easy. Be careful to not uproot plants just because above-ground material is dead.
Water only if a drought occurs.
Continue weeding as needed Raingarden plants will fill in spaces and form a dense root mat, which significantly reduces weeding over time. New plants may need to be added if some didn't make it through the first year, or experienced accidental damage during maintenance.
Keep a monitor checking on the raingarden every 3-4 weeks during summer months.

General:

Prescribed burns are great for the raingarden and an exciting opportunity for students. Inquire about this possibility with VLAWMO and your local county conservation district.
Remove any and all trash that may fall or drain into the raingarden.

Additional education opportunities:

- Classes may keep a chart of quantity and diversity of weeds pulled and compare this over time, or for seasonal comparison.
- Stems and seed heads can be used for winter lessons. Plants set their seeds in the fall and use winter, ice, and warming/refreezing patterns to help seeds germinate in the spring. Insects use plant stems to lay eggs in over the winter. Plants also serve as valuable food and cover for birds and rabbits.
- Phenology is the study of environmental changes over time. Students can make a field journal to document observations as the school year progresses, or take photos of the garden on a schedule for comparison. See VLAWMO's nature journaling and phenology resources for more information.

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Resources

Websites:

National Gardening Association:
http://garden.org/home

Kids Gardening:
http://www.kidsgardening.com

Weed Library:
http://www.garden.org/weedlibrary

MN DNR Plant Encyclopedia
https://webapps8.dnr.state.mn.us/restoreyourshore

Blue Thumb:
http://www.blue-thumb.org/

Minnesota Wildflowers:
https://www.minnesotawildflowers.info

Reflection

Essential questions for large or small group reflection:

1. How did you feel about the raingarden when we started compared to at the end of the season/project?
2. Looking at your school's raingarden now, what can you see that may need attention, and what is looking good?
3. If you were an early American settler or a Native American in the 1800's, what would plants mean to you?
4. Which plant was your favorite and why?
5. What can you tell friends or family who have never heard about raingardens?

Assessment

- Develop posters describing the importance of weeding.
- After experiencing a season of monitoring and raingarden maintenance, have students create their own creative, custom management plans on posters or skits.
- Students keep a field journal over time with drawings or written notes. This may provide a calming, introspective, and artistic activity to balance out more extroverted activities.