

WISCONSIN SCHOOL GARDEN INITIATIVE BRIEF:

INDOOR GARDENING AT SCHOOL



**Wisconsin
Partnership Program**
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Every fall, we put the garden to bed and wait out the long Wisconsin winter for spring to return. Creating a garden indoors is a wonderful way to continue hands-on, garden-based learning while the snow flies, and often gives students a chance to take a closer look at what's happening with their plants. This brief gives an overview of some of the indoor gardening options available to schools, and resources for how to create them.

Why Garden Indoors?

Zooming In –Gardening with limited space encourages students to take a close look at those few, precious plants. It is a perfect time to observe root structure, watch the miracle of germination, and appreciate the flavor in every leaf.

Bucking the Winter Blues – Research shows that even a small number of plants can improve air quality and elevate mood. Winter is the perfect time to create a space where students can continue to reap the physical, emotional and intellectual benefits of gardening.



A student shows off a succulent garden made with home-grown worm compost.

Flexibility – There are indoor garden ideas to fit any space or budget. It is a great way to begin if you are interested in exploring the benefits of gardening, without making a big commitment. It can also be new challenge for experienced gardeners!

Get Excited – Students make a personal connection to plants, and love watching them grow and change each day. Keeping student interest in growing and observing plants can also help generate excitement about your outdoor garden in spring.

Fit Your Garden to Your Space

Not every school has a greenhouse for indoor growing, but luckily, indoor gardening provides plenty of flexibility for working with the space available. Here are a few ideas to get you started—remember, almost any project can be scaled down—or up!

Smaller Spaces

Bucket Hydroponics: Use a 5-gallon bucket to grow your own soil-less tomato plant!

Microfarm: Grow one tray or a whole wagon of yummy micro-greens for winter salads or taste-testing.

Mushrooms: Grow them in a plastic bag or on a small log.

Sprouts: The tiniest of indoor gardens—grow them in a jar or on a sponge.

Play Gardens: Help early learners get used to gardening with garden made of felt, or even a seed table!

Larger Spaces

Forcing Bulbs or other Potted Plants: Propagate your own succulents or trick daffodils into thinking spring starts in February. Use one pot or dozens.

Spring Seedlings: In late winter, start seedlings for planting out into your spring garden. Easy to scale down!

Hydroponics: Options range from the 4'x2' salad table to green-house sized systems.

Aquaponics: Like hydroponics, but requires fish and moving water. Additional space is suggested, but smaller systems are possible.

Hydroponics vs. Aquaponics

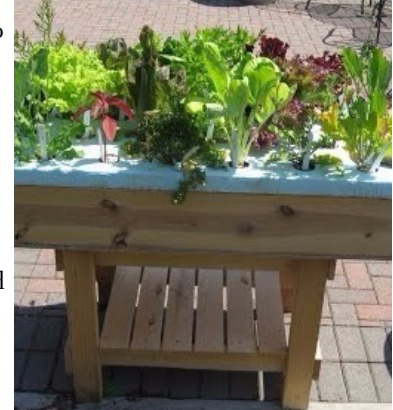
Hydroponics and aquaponics both allow students to explore soil-less indoor growing, and comparing them has plenty to teach about the nutrient cycle and ecosystem modeling.

Hydroponics —Plants are grown in water enriched with purchased nutrients—much like liquid fertilizers. Instead of growing in soil, plant roots grow on a **medium** provided by the gardener—usually clay pellets, rock wool, or perlite. The gardener carefully controls the pH, nutrient levels, and temperature. With these ideal conditions, plants often grow very quickly! Green, leafy plants are easier to grow than fruiting plants because they require less energy input.

Aquaponics —Similar to hydroponics, except the nutrients are provided by fish living in the water reservoir. Plant roots help to filter toxins from the water that then returns to the fish. Achieving the correct balance between plants and fish can be tricky, and often requires trial and error. Some types of fish, such as tilapia, can be harvested and eaten once fully grown.

Building a Hydroponic Salad Table

Hydroponics systems are classified as active—those that create moving water via an electric pump—and passive — those that do not have flowing water. The Hydroponics Salad Table is a passive design developed at the University of Minnesota that grows up to 24 plants at one time. We like it because it is simple to build, easy to maintain, and relatively low-cost. (About \$50, depending on lumber type.) It can be moved easily between indoor and outdoor locations, and grows excellent lettuce and herbs. In addition to building plants, the UofM inventors freely share tips on lighting and plant choices based on their own experience. The table’s footprint is 4’x 2’, but could easily be scaled down to fit a smaller space.



Left: Bucket hydroponics — Center: Seedling starts in old milk cartons — Right: Sprouts on a sponge make the tiniest garden.

Resources

- Hydroponics Salad Table: <https://sites.google.com/site/saladtableshootout/home>
- Bucket Hydroponics: www.hydroponics-simplified.com/support-files/mini-bucket-bubbler-pdf.pdf
- Aquaponics Basics: <http://aquaponics.com/learn/aquaponics-information/>
- Growing Mushrooms Indoors: www.growveg.com/guides/growing-gourmet-mushrooms-at-home-from-waste-coffee-grounds/
- Mushroom Spawn Supplier: www.fieldforest.net/
- Microfarm Manual: www.communitygroundworks.org/sites/default/files/microfarm_manual.pdf
- Planting Guide for WI Gardens (dates to start seeds indoors): <http://learningstore.uwex.edu/assets/pdfs/A1653.PDF>
- Growing Healthy Children—Garden Based Nutrition: www.communitygroundworks.org/sites/default/files/GrowingHealthyChildren_web.pdf



For more information about the Wisconsin School Garden Initiative, visit us at WISchoolGardens.org

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