



Instructional Herbariums (a botanical literacy program)

For more information about this program, please contact:
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Program Launch: 2022

Instructional Herbariums is a STEAM¹ and literacy educational program designed to serve K–8 classroom instruction for schools with active gardening programs. It is an adaptable kit of materials, resources, and lessons that teachers can use based on the needs of their classroom and readiness of their gardens. The projects and lessons are aligned with Pennsylvania’s Common Core and Next Generation Science standards and designed as a multi-sensory, step-by-step, cumulative series of activities. It is a botanical literacy program that teaches foundational content and skills in botany and technical and creative writing skills. It asks students to read and write about and with plants.

The program’s lessons amplify student experiences in their school gardens by using the garden’s plants as the content upon which students study fundamental principles of botany, and learn to read and write. The kit includes grade appropriate supplies, books, and a selection of podcasts, films, and audio-books to supplement a series of hands-on lessons. Each lesson combines principles of ‘nature-study’² as a method of studying plant life and Orton-Gilligham³ principles

¹ STEAM is an acronym for Science, Technology, Engineering, Arts, and Mathematics. STEAM approaches to instruction use the arts to encourage imaginative interaction with STEM subjects. *Instructional Herbariums* uses nature printing, technical and creative writing as means for studying botany.

² Judson Gillian, *A New Approach to Ecological Education, Engaging Student’s Imagination in Their World* (New York: Peter Lang Publishing, Inc., 2010).

³ Orton Academy, “OG Approach Principles,” n.d., <https://www.ortonacademy.org/resources/og-approach-principles/>.

for teaching reading and writing. As a ‘nature-study’ program, it encourages students to ask scientific questions as they construct the processes of their investigations. Orton Gilligham’s methods for teaching students with learning disabilities to read and write encourage “multisensory engagement with language whereby all learning pathways are engaged.”⁴ This approach guides each lesson in that students are encouraged to handle their plants and to develop an emotional attachment to their plants through reading and writing. *Instructional Herbariums* unifies a scientific ‘nature-study’ approach with an approach to literacy that benefits all students, especially emerging readers.

Prototype Development Partnership

I am seeking partnerships with schools and teachers to develop this program from a prototype into a tested, instructional program for K–8 STEAM instruction. Ideally, I would like to work directly with a school’s art teacher, classroom teachers, and reading specialists.

Costs Associated with a Partnership

2–3 hour in person introductory workshop (materials and regional train travel for schools outside of Philadelphia region)	\$500
2–3 hour in person introductory workshop (materials and local travel)	\$100–150
<u>Program Materials for a Single Classroom (listed below)*</u>	\$511.00
Paper (9x12 student grade printmaking paper, 100 sheets)	22
Brayers (3) (3 sizes, 2", 3", 4")	46
Barens (3)	40
Gray Linoleum Printing Block (9x12")	9
Plant Press (Small Collector Kit)	100
Plexi Glass Palates	15
Classroom Scissors	0
Four (4) Classroom-grade Gesso Bristle Brushes, 1"	16
Linseed Oil	11
Powdered Charcoal	18
Recycled Newspaper	0
<i>How to Make a Plant Collection for beginners and volunteers</i> , Dr. Steven Hill	4
Large Paper Notebook to archive pressed plants (archival paper, 11x14')	20
Small Notebooks for each Student, 25 total (picture journals, student grade)	60
A selection of grade appropriate books, audio-books, pod-casts, and films to supplement lessons	150

*Some of these materials costs could vary depending on availability in the school and their art classrooms.

⁴ Orton Academy.

Postscript

I developed this program as a graduate fellow of the Penn Program in Environmental Humanities at the University of Pennsylvania. It is based in part on my historical research about the traditions of nature printing, gardening, and poetry in colonial Pennsylvania before 1719. I tested some of my instructional materials and methods in a workshop for Penn students and faculty on April 7, 2021. For more information about this workshop, see: [*Writing Botanical Stories*](#). For more information about my research, see: [*Writing Stories Into the Garden*](#).

Sources Referenced

Blair, D. "The Child in the Garden: An Evaluative Review of the Benefits of School Gardening." *Journal of Environmental Education* 40 (2009): 15–38.

Eick, Charles J. "Use of the Outdoor Classroom and Nature-Study to Support Science and Literacy Learning: A Narrative Case Study of a Third-Grade Classroom." *Elementary Science Education* 23, no. 7 (2012): 789–803.

Gillian, Judson. *A New Approach to Ecological Education, Engaging Student's Imagination in Their World*. New York: Peter Lang Publishing, Inc., 2010.

Orton Academy. "OG Approach Principles," n.d. <https://www.ortonacademy.org/resources/og-approach-principles/>.