

Tools and Materials for an Outdoor Classroom

Imago has been leading outdoor explorations with students for over 25 years. In that time, we've created a list of materials and tools that we feel are essential for outdoor learning, as well as some that are nice, and finally, some that are a luxury. All too often, we've seen schools invest resources in items that turn out to be mostly unnecessary, or a product that doesn't hold up over time.

Below is our list of [Essentials](#), [Nice to Have](#), and [Luxury](#) Tools and Materials for Outdoor Education.

You can also jump straight down to the [checklist for a summary of recommendations](#).



Imago has been leading outdoor and environmental education programs for classrooms for over 25 years. To learn more about our programs at schools, how we can build and improve outdoor learning areas at your school and how we can support outdoor learning check us out at imagoearth.org/branchingout

Outdoor Storage

Number Needed: 1

Having a place that is easily accessible to classrooms and community members to store materials, will make it much easier to encourage outdoor exploration.

Material

We recommend storage that is **metal or wood, versus plastic**, as the cheaper plastic sheds and boxes tend to deteriorate and deform over time.

Lock

We also recommend using either a **combination or programmable lock** instead of a keyed padlock. Sharing a combination is far easier than sharing keys. Keys inevitably get lost. Programmable locks allow you to periodically change the combination for security. Make sure that the lock is outdoor friendly and can withstand the elements.

Organizing and Shelving

We strongly recommend investing in **storage and shelving options**. Hooks and racks for tools, buckets for small tools, labeled and sealable bins for materials, shelves for smaller materials, etc. The moment a tool leans against a shed wall, or a box of materials is left on the floor, you're inviting the next person to do the same thing and then your shed will feel unusable very quickly.

Recommendations

- [*Box Style \(best for smaller amounts of materials\)*](#)
- [*Shed Style*](#)

Trowels

Number Needed: Classroom amount - about 30

Trowels are a universal tool in a garden setting and can be used by youth or adults. Most garden chores (weeding, sowing, etc) can be accomplished with a trowel and trowels are nice tools for looking for little invertebrates hiding under rocks and logs.

We recommend plastic over metal, as they are cheaper, and sturdier. Metal trowels often have a metal stem connecting the head to the handle, and these stems will get bent and break over time. Metal trowel edges also tend to be sharper than plastic ones and are less safe for young gardeners.

Recommendations

[Trowel](#)

Youth Garden Gloves

Number Needed: Classroom amount - about 30

Like trowels, gloves are a great tool to have for students to work in a garden. There are several brands of relatively inexpensive garden gloves for young people and you can typically buy them in large sets.

A few considerations when choosing gloves.

There are a multitude of options for types of gloves. Any garden glove that will fit young hands will do the trick but here are some factors to consider when choosing gloves:

- **Materials** - we recommend avoiding all-cloth gloves as those will tend to break down faster, especially if they get wet. That said, you don't need heavy duty gloves or gloves with waterproof neoprene.
- **Pattern** - Having gloves that have a difference in color, pattern or texture between the palm and the back of the hand is nice. This helps the youngest students figure out which part of the glove covers which part of the hand.

Recommendations

[Our current favorite](#)

A Place for Waste (especially compost).

Number Needed: Bin for trash, recycling and compost.

Make sure that there is a space outside that you can sort your waste, most importantly compost. As you weed in the garden you will inevitably collect compostable material. What is compostable is a fundamental lesson in school gardens, and processing compost is a great student chore.

For trash and recycling, small simple cans/bins will suffice - or using already existing sorters that might be out on the school grounds.

For compost, there are a number of routes you can go. For smaller spaces, using an enclosed bin is best. This keeps the compost out of sight and the outdoor space from

looking too messy. If you have the room, then a larger bin system is recommended. This is especially useful if you want to expand your composting to include food waste that comes from the classrooms or the cafeteria.

Examples of Composting Systems

- *Enclosed Systems*
 - [*This is an example of a tumbler*](#) - there are many like these to choose from.
 - [*Earth Machine*](#) - available from Hamilton County ReSource
- *Bin systems*
 - [*Here's a resource on bin systems*](#) - there are a great many variations on a multi-bin system.

Basic Wellness

Having some basic wellness supplies rounds out your necessary items. Things like hand sanitizer, tissues, and a first aid kit are all great to have!

Nice to Have

Teaching Materials

There are some basic teaching materials that every classroom can share and use to facilitate classroom exploration. We recommend having a classroom set of **clipboards**, a classroom set of **pencils** (and a few sharpeners) and one **dry erase board and markers**.

The clipboards allow your students to fill out a sheet, or take notes or observations anywhere in the outdoor space, minimizing the need for a table. The dry erase board is a place to post rules or lesson instructions, or to leave messages for other classrooms and gardeners.

Extra Warm Clothes

Number Needed: enough for 5-10 students.

Have a small bin with extra warm clothes for those students that didn't dress appropriately for that cool fall or spring morning. We recommend having some fleece or sweaters that are on the bigger side to accommodate a greater number of students, and some warm caps. Warm gloves are a nice addition too, but garden gloves will help in a pinch.

Youth Shovels

Number Needed: 10-20 (not every student needs a shovel all the time).

A shovel is the classic garden tool. At Imago, we've yet to find the perfect youth shovel.

Most shovels made for youth, tend to be too flimsy for regular use, and are more suited to pretend play. Heavier duty shovels will last longer, but they are far more expensive.

Before our students start using a shovel, we lead a short lesson on how to use a shovel properly and safely. Some of our key points are:

- The number one thing to remember about tool safety is that tools should only be used for their intended purpose. So for a shovel, we only use them to dig.
- Shovels had two main parts, the head (point to the head of the shovel) that goes in the ground and does the digging, and the handle (point to the handle) that is what you hold.
- Go in at an angle with the pointed end of your shovel, bend your knees when you are digging and lift with your legs not with your back. Avoid digging straight into the ground or leaning on the handle of the shovel. That can strain the tool and break it over time.
- Be aware of your surroundings. Check to make sure that you aren't going to hurt a plant, an animal, another person, or yourself!
- When you pull the head of the shovel out of the ground, be careful not to fling dirt on your friends.
- Never lift the shovel above your waist. Lifting the tool or swinging it is not safe and you run the risk of hitting someone.

Recommendations

- [Our current favorite youth shovel](#)

Chore helpers - Watering Cans and Compost Sifters

Number Needed: 2-3

Watering and sifting compost are two fundamental (and favorite) garden chores.

Young gardeners love to water seeds, sprouts and plants. **Any watering can will do!**

Compost sifters are typically wire mesh frames that help to separate fully composted soil from organic material that still needs to "cook" in the compost pile.

The simple practice of adding organic waste to the compost pile, turning the pile, sifting the compost and adding the finished compost to a garden bed to help fertilize the next planting is a wonderful way for students to learn and practice a cycle of care for their outdoor spaces.

Notes about sifters

You can certainly buy a sifter, but they are also a relatively easy project to make. Here are some sifter considerations:

- Size your sifter so that it will fit above (and not in) your wheelbarrow. That way you can prop it up on the lip of your wheelbarrow and then sift INTO the wheelbarrow.
- Your sifter should have enough of a “well” that you can dump a shovel full or two of compost into it, to sift.
- Having handles on your sifter are nice so that you can sift by shaking, but also the handles can be used to set your sifter above the wheelbarrow.
- You can build a sifter using lumber (can be upcycled), hardware cloth, staple gun staples, and screws. [Here's an example.](#)

Adult Tools

A successful garden space will also need some help from adults in the community be they teachers, parents or other community members. Having a few sets of adult tools will make it easy for any grown up to step in and help.

Please note that adult tools should be used just by adults.

We recommend having:

- 3-4 shovels
- 1-2 pitchforks
- 6-10 pairs of adult gloves
- 1 pair of loppers (for cutting out stubborn trees that are growing into the garden)
- 1-2 Wheelbarrows

Discovery Tools

There are a number of discovery tools that encourage outdoor exploration.

Terraria

Number needed: 1 - 3

Any box or bin can serve as a terrarium, but we find that the small plastic terraria are relatively inexpensive and are a great way to temporarily house small creatures that you find. They are also small enough that they can easily live in your outdoor storage without taking up too much space.

Recommended - [Mini Observation Container](#)

Magnifiers

Number needed: 5-10

We find that students like the idea of using a hand lens or magnifier more than they actually like using one. For that reason we recommended using a small container with a magnified lid - this container can serve both as a temporary catcher for bugs, but also a place to display and observe outdoor findings.

Recommended - [Clear Bug Boxes](#)

Binoculars

Number needed: 5-10

Like the magnifiers, students really love the idea of using binoculars, but they often struggle with using them correctly and become more focused on being frustrated by them than actually observing through them. If you are going to get binoculars for your class, look for ones that are youth friendly, meaning that they will be smaller and can withstand some inevitable banging around from young explorers. Stay away from the very cheap plastic binoculars that are more toy than tool, and are better suited for pretend play.

Recommended - There are many to choose from but [this is a brand that has worked well for us](#)

Field Guides

Students love looking through field guides to see if they can identify a flower, bird, or bug. For most discoveries a field guide tends to be overly complicated, but there are field guides that are oriented towards youth.

Recommended

- [*Ohio Department of Natural Resources has a whole webpage of local field guides. Each guide has colorful pictures and interesting facts and are relatively easy to use. These guides are free to download.*](#)
- There is also a [*Peterson Field Guide for Young Naturalist Series.*](#)

Other Teaching Materials

Enhance your observations by adding crayons, glue sticks, scissors, markers, colored pencils, etc. These can be great additions if your lesson entails creating more detailed drawings or journaling.

Youth Wheelbarrows

Youth wheelbarrows tend to be better suited for pretend play. The idea of a wheelbarrow is fun, but we have yet to find a brand that can withstand regular use and actually feel useful. Although an adult wheelbarrow is not as well suited to a student, they are still a better option than investing in youth wheelbarrows.

Recommended - [*here is one brand that we have purchased with mediocre results*](#)

Checklist of Recommendations

	Item	# recommended
Essentials	Outdoor Storage	1
	Trowels	30
	Youth Garden Gloves	30
	Place for waste (especially compost)	1 each for trash, recycling and compost
	Basic Wellness - Hand Sanitizer, Tissues, First Aid Kit	
Nice to Have	Teaching Materials (especially clipboards and pencils)	
	Extra Warm Clothes (especially sweaters and warm hats)	5-10 of each
	Youth Shovels	5-10
	Watering cans	2-3
	Compost Sifters	2-3
	Adult Tools	3-4 shovels, 6-10 gloves, 1-2 pitchforks, 1- 2 loppers, 1-2 wheelbarrows)
Luxuries	Discovery Tools	1 - 3 Terraria, 5-10 Bug Boxes/Magnifiers, 5-10 Youth Binoculars, Youth Field Guides.
	Other Teaching Materials	Markers, Crayons, Colored Pencils, Scissors, Glue Sticks, Etc.
	Youth Wheelbarrows	