

Lurking Just Outside the School's Back Door

By Steven Glazer

It's late autumn. The sun is out, the sky is blue, and there is a terrible stench in the air.

"Pew!" "What's that smell?" "Where's it coming from?" ask the students.

Close your eyes, I say. Open your nose. Take a big whiff. Let your sense of smell show you the way.

"There!" Poking up through bark mulch twenty-five feet from the back door of the Kearsarge Regional Middle School, in Sutton, New Hampshire, is a bizarre looking and strange smelling mushroom.

"Yuck!" "Cool!" "What's that?"

Wait. Before naming it, I say, let's take a closer, longer look. Eighteen 6th grade students circle up. A few get down on their hands and knees, gathered 'round the alien forms poking through the light brown wood chips.

I invite the students to examine more closely. What color are they?

"Green." "Gray." "Greenish gray." "Look at all those flies!"

Focusing in on one thing, we begin to see even more – *the flies*. Is the whole mushroom greenish gray? I ask.

"No, just the top."

With a mushroom, the top is the cap. Repeat after me: cap. "CAP." Who wants to measure the cap? Half a dozen hands shoot up. There's no shortage of volunteers when the task is real, unusual...mysterious even.

Here's a tape measure. What's the cap's diameter? "Three centimeters."

Caps come in different shapes. What words would you use to describe this shape?

"Pointy." "It's sort of shaped like a cone." "Like a green beanie with a white pompom."

Mushroom field guides use some of these words: flat, depressed, convex, concave, conical. Conical: "sort of shaped like a cone."

What color is the rest of the mushroom?

“White.” “Yellowish.” “White-ish.”

What part is white-ish?

“The trunk.”

With a mushroom, the trunk is variously called the stem or stipe. Can you say stipe?
“STIPE.”

Our inquiry continues: Does the stipe have a ring (or annulus) around its stipe or not? NO. Does the mushroom grow out of a cup (volva) or not. YES. Look under the cap. What does it look like down there: Are there gills (radiating like spokes)? Tubes (like looking into a box of straws)? Pores (like the tiny holes in your skin)? Teeth (which hang down like icicles beneath the cap)?

Next, we widen our gaze. Where are the mushrooms growing? On the ground? Up on a tree?

“On bark mulch.”

It the shade or the sun?

“Sun.”

Then we fan out to look for more of them. Everyone’s eyes are WIDE open: looking, seeing, fascinated by the ordinary, and “on task.” They’re engaged with the lesson, with their senses, and this wild, wonderful world.

We find the same mushroom at various stages of development: still in their cups, breaking out, almost mature, fully mature, stinky and buzzing with flies, and a puddle of black slime.

Circling back up, we review the inquiry process. First, look for the details: the structure, size, and colors. Then, widen to the context, the habitat, the “where.” And don’t forget the “when!” *“To everything there is a season.”*

Now, if it were up to YOU to name this mushroom, what would you call it?

“The Smelly One.” “The Nasty One.” “The Stinky One.”

You got it! The mushroom, in fact, is a Stinkhorn.

Does the mushroom’s fragrance have a purpose? Hmmm.

INSERT PHOTO OF STINKHORN

Now that we have practiced the ID process, I hand out data collection forms. Together we meander towards to edge of the woods. Every thirty feet we find more mushrooms.

“Look at these shaggy ones.” “This one is HUGE!” “Puff balls!”

With each new discovery, we drop off a group of three students, with clipboard, pencil, data collection form, measuring tape and hand lens. Everyone has something real, interesting and engaging to do.

Across forty yards, we’ve manifested six outdoor classrooms; and within a half hour, students have carouselled around the collection, gathering data for four to six mushrooms. But more importantly, they’ve deepened their ability to see, and are practicing the process of inquiry and identification.

INSERT MUSHROOM DATA COLLECTION FORM

We re-group again, and I challenge them: Can we find 10 different kinds of mushrooms in five minutes? Hardly a minute passes and we’re ready to gather a dozen specimens using dull plastic knives. We’ll bring these back inside to the classroom, and use them to create a dichotomous key.

While we pass around the hand sanitizer, we push two tables together, put down a piece of flip chart paper, and carefully lay out our bounty. It’s quiet. It’s kind of like being in a museum. Each piece of art is different. There is such a strong center to the class: everyone is focused, held by the beauty in the details. Bright reds and yellows. Branching forms like trees. Circular forms like balls. Translucent yellow jelly.

I introduce the dichotomous key. Scientists use a tool—the dichotomous key—to distinguish different species. To make a dichotomous key, all you need to know is one thing: How to ask a question that will divide (DI - vide, DI - a Greek prefix meaning “two”) one group into two groups.

What’s a question that we can ask to split this collection into TWO groups?

“Is it brown?”

Sure, some are brown and some aren’t. What else might we ask?

“Is it big?”

What do you mean by big?

“Is it a Stinkhorn?”

How did we know it was a Stinkhorn? What were some of the things we first noticed about the Stinkhorn?

“Does it have a cap?” “Does it have a cup?” “Does it stink?”

Cool. Let’s start:

Does the mushroom have a cap?							
YES				NO			
Does it have a cup?				Does it grow on a tree?			
YES		NO		YES		NO	
Gills?		Ring?		Shelf-like?		Like a ball?	
YES	NO	YES	NO	YES	NO	YES	NO

The KRMS students might not know ALL the mushroom’s names, but they’re learning how to see. And furthermore, something previously invisible has been revealed: an entire, mysterious kingdom.

The truth is that mysteries are not far away. They are lurking right outside the back door. But can we learn how to see them? And incorporate these mysteries into our teaching?

The Forest for Every Classroom (FFEC), a yearlong professional development program for teachers, taught me—and many other teachers—a particular way of seeing: looking for pieces, patterns and processes.¹

The *piece*: focusing one’s awareness tightly on an organism. Noticing its characteristics, qualities, and individuality. The *pattern*: broaden your gaze. Is there another “piece” nearby? Or: what is the relationship of that piece to the larger field. And finally the *processes*: Do these pieces and patterns—taken together—reveal a teaching, a story, or some living process?

Right here, behind the school, we found a *piece*: a mushroom, with a white tip on a conical green cap. That white stalk rises out of a subterranean egg / cup / volva. The *pattern*? A mushroom that likes the sun, the autumn, and wood chips; with a life cycle that arcs from mycelium strand to closed egg to erect stalk and stinky

¹ <http://www.nps.gov/mabi/forteachers/forest-for-every-classroom.htm>

slimy puddle buzzing with flies. The hidden *process*: The stinkhorn sends out a message to us. “Yuck!” Yet that same message beckons the flies. They think they’ll be dining on rotting flesh. “Yum!” Instead, Stinkhorn spores stick to the flies mouths and legs, and as the flies move on the spores are disseminated, and the species is propagated.

Now that the students could see mushrooms, and pieces – patterns – processes, we could move to the forest edge in search of a larger, hidden pattern: decomposition.

Forest For Every Classroom also modeled and taught three portable “promising practices” of place based education. *Place*: nest learning in the best possible outdoor classroom for that topic. *Time*: recognizing that things happen in their own time. Sometimes we need to seize the day, to teach in season; or to revisit a thing or place again and again over time. Things unfold in time. Real inquiry takes time and engagement. But engagement over time yields learning. *Partnership*: Recognize that you don’t need to (and can’t) know it all; that help is nearby and available; and there is great power in relationship and collaboration. Who—in your community—knows deeply and personally the topics you are engaged in? My FFEC colleague Michael opened my eyes to mycelium and more.

Lurking just beyond the school’s backdoor is a mystery, and an invitation. Why not go there? Seeking, finding, and learning:

*I went walking out to the woods. I looked down on the ground
It had rained just the other night...and what do you think I found?*

*There’s fungus among us. There’s fungus among us it’s true...
And if you go walking out in the woods I think you’ll find fungus too.*

Steven Glazer participated in the first Forest For Every Classroom (FFEC) program. Author of *The Heart of Learning*, co-author of *Questing: A Guide to Creating Community Treasure Hunts*, and editor of *Best of Valley Quest: Treasure Hunts to Special Places*, he now serves on the FFEC Advisory Council and consults with schools and communities across the country through Poetics of Place. For more information, visit www.poeticsofplace.com.