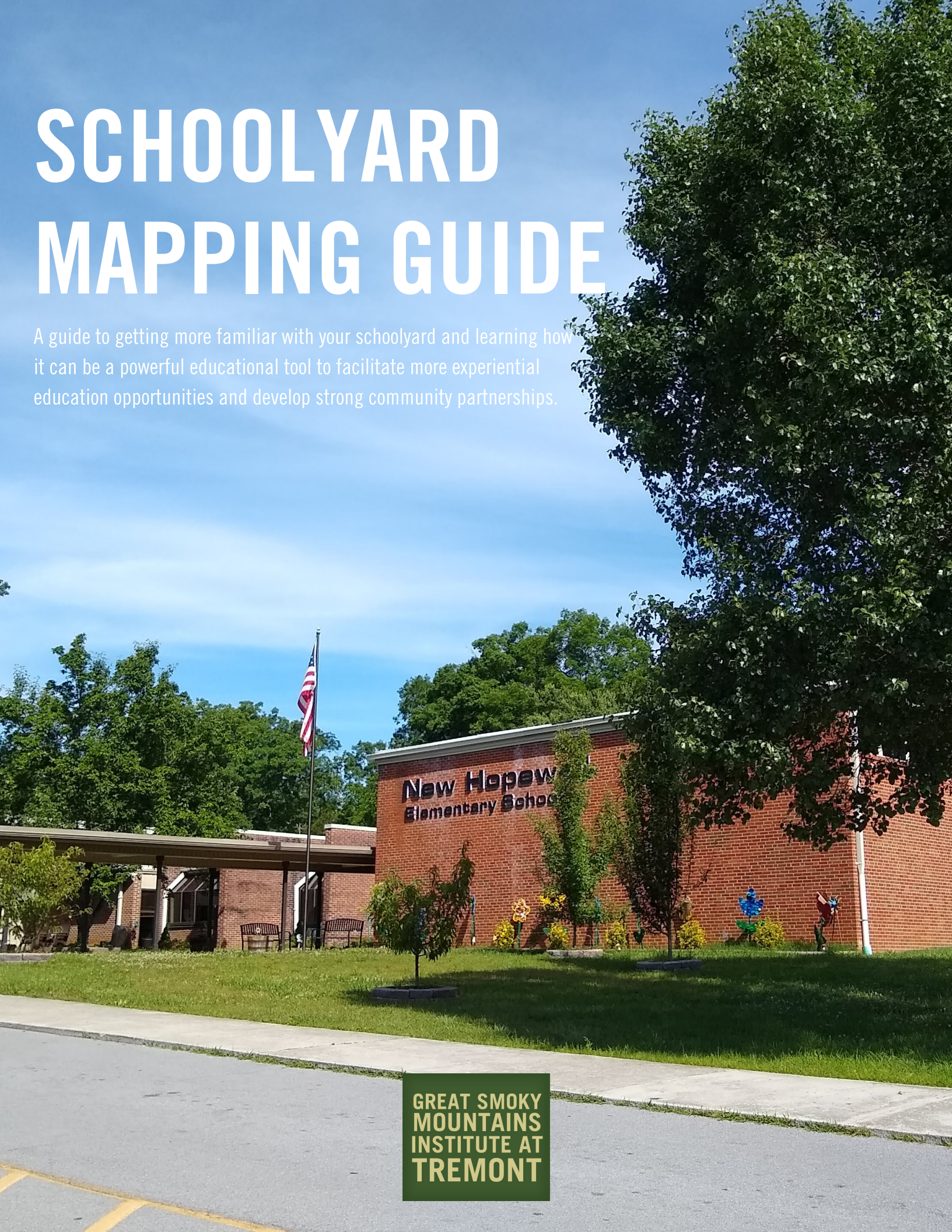


# SCHOOLYARD MAPPING GUIDE

A guide to getting more familiar with your schoolyard and learning how it can be a powerful educational tool to facilitate more experiential education opportunities and develop strong community partnerships.



**GREAT SMOKY  
MOUNTAINS  
INSTITUTE AT  
TREMONT**





# Introduction

Great Smoky Mountains Institute at Tremont (Tremont Institute) is a residential environmental education center located within Great Smoky Mountains National Park. We deliver experiential outdoor learning for youth, adults, and educators through programs that promote self-discovery, critical thinking, and effective teaching.

During the spring of 2019, we worked with the following five schools with a wide range of schoolyards in Knoxville, Tennessee to create schoolyard maps:

- Dogwood Elementary School
- New Hopewell Elementary School
- South Knoxville Elementary School
- South Doyle Middle School
- Fulton High School

Our aim was to assist school staff and partners in getting more familiar and comfortable with their schoolyards so they can more confidently lead outdoor experiential education activities for students. This document lays out our process, what challenges we encountered and lessons we learned, and how we and our school partners see the schoolyard maps being used or expanded upon in the future.

This mapping guide will help you assess what your schoolyard has to offer and produce a valuable resource that can be used to make the outdoor space more accessible to all.

# Why Should I Map My Schoolyard?

Schoolyard mapping is all about understanding what resources exist in your schoolyard, how the school grounds are being used, and leveraging that newfound comprehension to amplify students' education through outdoor experiential learning opportunities.

Every schoolyard, from those in the middle of an urban downtown area to those tucked inside a forest, holds the potential to host engaging experiential education opportunities. Any plant life, topographical features, differences in noise pollution, or a number of other features found outside school doors can be used for high-quality outdoor learning opportunities. Students could learn geometry concepts by measuring the angles of a hill, complete a creative writing prompt about the sounds of the schoolyard, calculate the area of the rooftop, or track the changes in the trees' leaves with a phenology project.

**Schoolyard maps can be useful for a wide variety of school needs, such as:**

- Planning lessons that incorporate standards-based experiential education by utilizing resources that exist in and around school grounds, making learning more local
- Helping new teachers or school staff who haven't taken students outside before become more familiar and comfortable with the schoolyard, and help all school staff and even the community take pride in the schoolyard
- Working with community members and partner organizations to plan events and field days that leverage the unique outdoor features
- Surveying the natural landscape around your school for schoolyard certifications, scientific monitoring and experimentation, and schoolyard renovation or habitat restoration projects

Even if you have been outside with your students hundreds of times and are familiar with every inch of your schoolyard, the very act of mapping teaches you new things and may even give you new ideas of how to interact with the living laboratory just outside your school's doors. If nothing else, a schoolyard map is a way to pass down your knowledge of and experience with the schoolyard to new school staff for years to come.





# Types of Schoolyard Resources

When surveying your schoolyard and assessing how you can use it as a living laboratory for lessons, it helps to break down the features and resources into separate categories to define what you include in your schoolyard survey.

## Natural Features

Your schoolyard's natural environment is one of the most powerful educational tools outside the classroom door. Add any notable topographical/geologic features, bodies of water, plant life, signs of wildlife, and variations in sunlight or noise to your map.



## Land Uses

Most schoolyards have at least two different types of land uses/groundcover. Pavement, mowed grass, athletic fields, gardens, wooded areas, wetlands, and other land uses were defined in Tremont Institute's schoolyard mapping initiative, and all offer unique opportunities for outdoor learning.



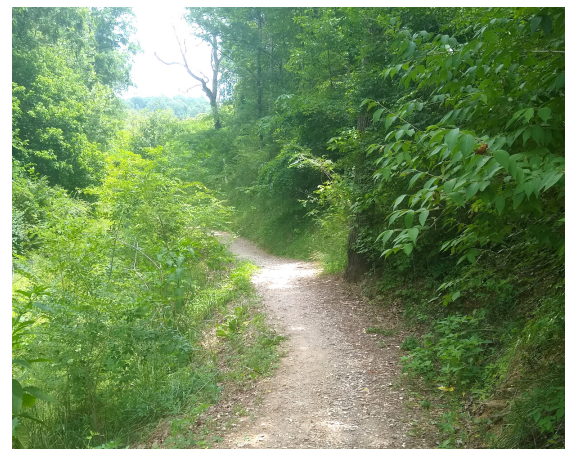
## Built Structures

Structures where students gather or play, such as playgrounds and picnic tables, can be used during outdoor learning activities, and can even be educational themselves! In addition, any structures built purely for educational uses, such as outdoor amphitheater or bird boxes, should be added to your schoolyard resource map.



## Accessibility Considerations

Noting what areas of the schoolyard are accessible during the school day, and to whom they are accessible, is vital to planning schoolyard activities. If your school has a joint use agreement and community members have access to the school grounds at certain times, including this information will be helpful to maintain schoolyard safety. Indicating any formal and informal pathways, such as greenways or trails, is also a great addition to schoolyard maps.





# Who to Involve

Getting folks from different positions and perspectives is a great way to ensure the map is as helpful as possible to the intended audience. Involvement in the mapping process could range anywhere from answering some questions, providing information about past schoolyard activities, or going out into the schoolyard to map the school grounds.

## Teachers

Including teachers in the schoolyard mapping process is important to understand how the school grounds have been/are currently being used for educational activities. In addition, teachers can provide insight into any barriers that prevent them from facilitating outdoor learning opportunities more often.

Not all teachers could be involved in the on-site mapping, so Tremont Institute sent a Google Forms survey to teachers at schools we were mapping before we completed the on-site survey. The survey asked teachers how they use the schoolyard, how often they use it, and why they don't use it more, as well as what they were most curious about in regards to their school grounds.

## Administrators

School administrators are valuable additions to the schoolyard mapping process. They can provide insight on community access and safety protocol, along with acting as a liaison between those involved with the mapping and the rest of the school staff.

## School Partners

Some schools have a base of community members and organizations who are involved with the schoolyard, and they can offer their past experience and involvement to inform the schoolyard map. Garden groups, the county health department, the local Sierra Club chapter, and a local education foundation were involved in Tremont Institute's schoolyard mapping initiative in Knoxville since all were regularly involved in the schoolyards we mapped.





# Mapping Process

1

Before doing anything else in the mapping process, it's important to set goals and figure out desired outcomes. You may want to gain a better understanding of the schoolyard before setting up research plots, create an interactive platform for sharing outdoor experiential education activities, or figure out where your community can be more engaged in your school's outdoor space!

2

Survey anyone who has used the schoolyard to understand when and how the outdoor space has been used, as well as how people could potentially use a schoolyard map.

3

Gather a group of invested individuals, hopefully including teachers, administrators, and school partners, who are interested in contributing to the mapping project and set a date to do an on-site survey of the schoolyard.

4

Pull together maps that could inform your on-site survey for property boundaries, topography, trails, or any other kinds of maps that relate to the schoolyard.

5

Draw a map including an outline of the school property, buildings, parking lots, and any other large features you know of.

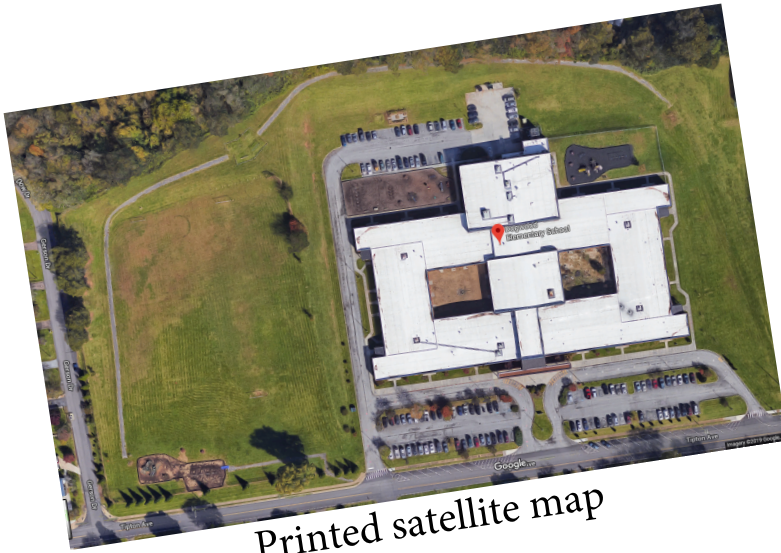
6

Walk the schoolyard for 1-2 hours with mapping participants to add important features to the map, breaking into smaller groups if necessary. Be sure to take note of any hazards or accessibility concerns for different areas in the schoolyard, and take pictures of any notable feature you come across.

Re-gather mapping participants and compile all maps to co-create a collective schoolyard map. One way to make your map more accessible is to digitize it, which you can read more about on page 7.

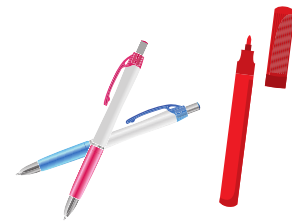


# Mapping Materials



Printed satellite map

## Sticky notes



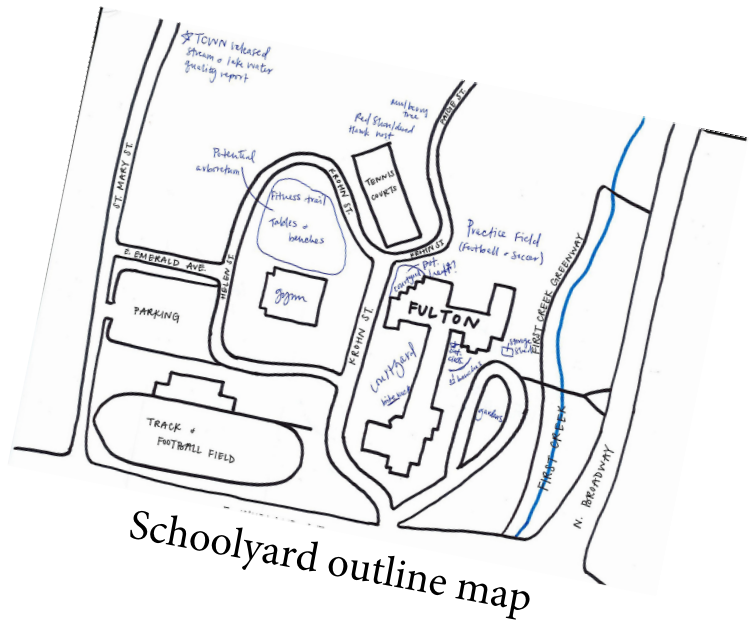
## Pens & markers



Google My Maps  
app (optional)



## Clipboard



Schoolyard outline map



Camera or phone



# Digitize Your Map

Creating a digital map is a great way to take your schoolyard mapping even further and make the final map more accessible and adaptable, and there are many different platforms you can create a digital map on.

Google MyMaps is a helpful and free way to digitize your map. Through this platform, you can create interactive **lines**, **shapes**, and **points** to mark different areas and features in the schoolyard. You can also include captions, pictures, videos, and URL links that will pop up in a description box when you click on the corresponding point or shape in the map. In addition, these digital maps can be edited and collaborated on like other Google Suite applications. To learn more about how to create your own Google Map, visit <https://www.google.com/maps/about/mymaps/>.

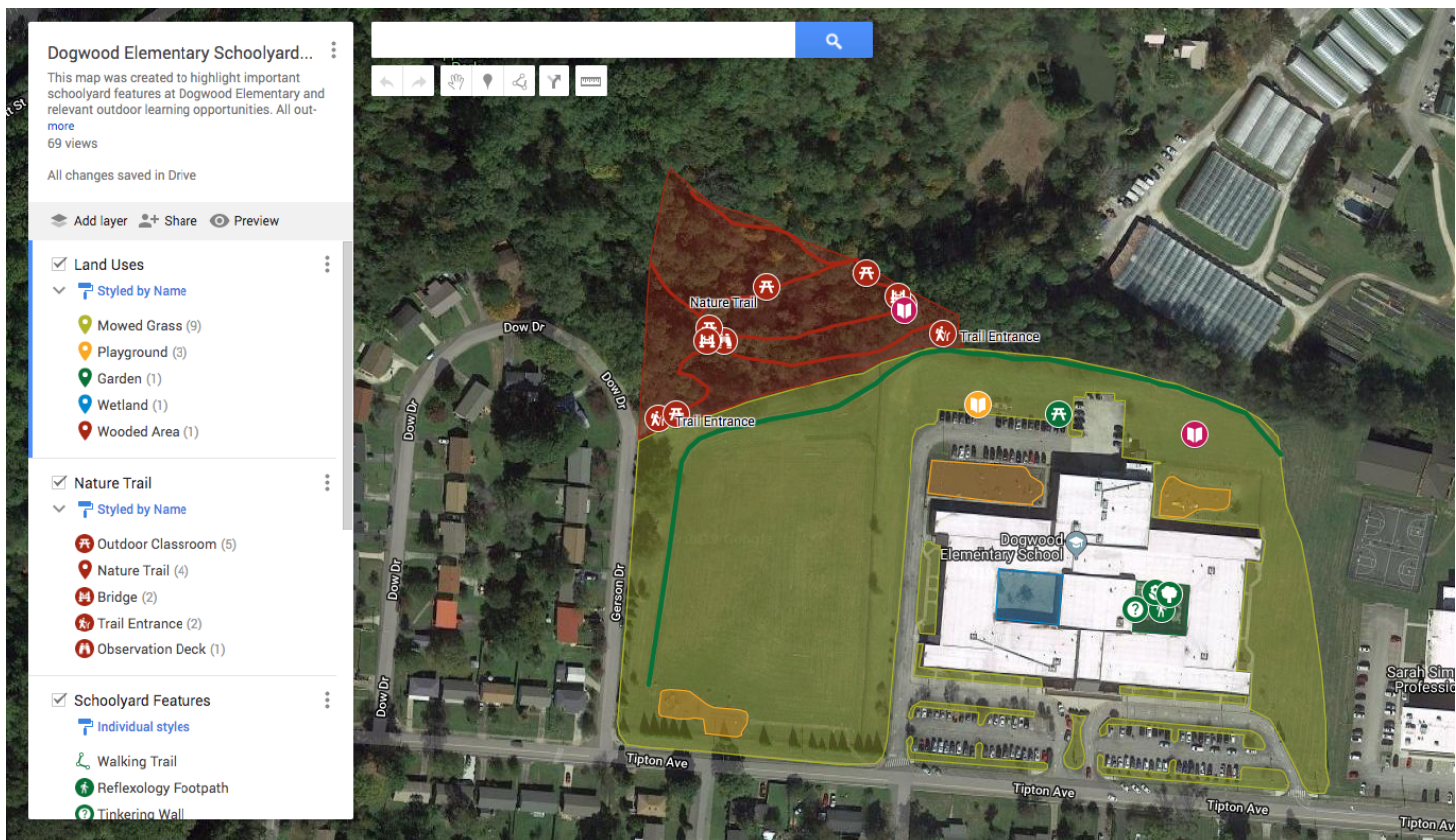
## Key Terms

**Line:** A shape defined by a series of connected points with accompanying coordinates, marking features such as trails

**Shape:** A closed shape defined by a connected sequence of coordinates, marking areas such as playgrounds and gardens

**Point:** A single location defined by a pair of coordinates, marking features such as outdoor classrooms and lesson locations

**Layer:** An organized group of lines, shapes, and layers that are categorized by a common theme, such as land uses or schoolyard features



As we developed maps with our partner schools, we found several different categories of map **layers** to be informative for planning outdoor learning activities.

## Land Use/Groundcover

Different land uses and parts of the schoolyard, no matter how small, can be useful in outdoor education. Categorizing all parts of the schoolyard as mowed grass, gardens, playground, blacktop, or various other kinds of groundcover serves as a great base map to plan outdoor experiential education and activities and also helps paint a holistic picture of the schoolyard.

## Schoolyard Features

Adding all of the significant points of your schoolyard, such as small gardens, shaded seating areas, or observed animal habitats, is vital to getting a holistic view of what your school grounds have to offer. Depending on the size or complexity of your schoolyard, you could have several different layers that highlight significant features. Examples of separate “sub-layers” could be for outdoor seating spots, natural educational features (waterways, unique trees, observed bird nests), established education/research features such as bird boxes, or even “frontiers” in the schoolyard that need more exploration!

## Suggested Outdoor Learning Opportunities

By collaborating with other teachers or community partners who have led activities in the schoolyard, you can add lessons that have already been done or are being planned in your school’s outdoor space. Categorizing activity suggestions by grade level, subject, duration, ideal season, or other considerations is extra helpful when considering this map as a resource for others engaging in outdoor experiential education.

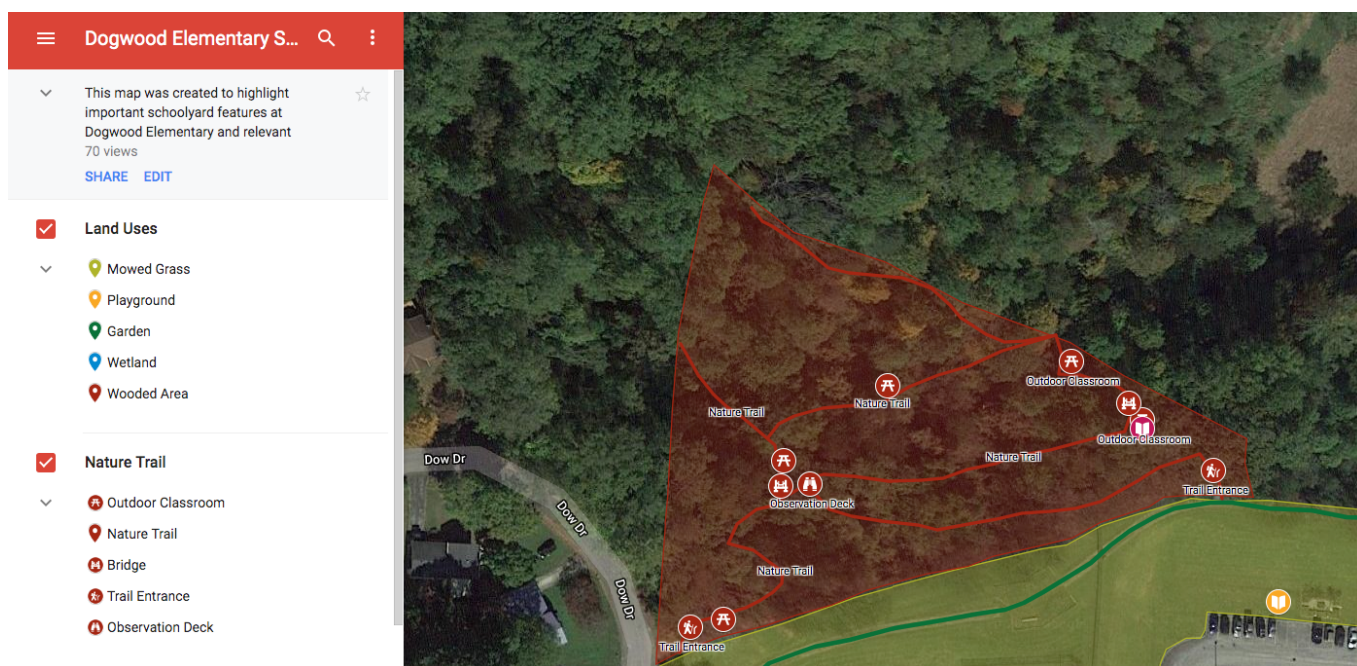
## Teacher-Tested Outdoor Learning Opportunities

As teachers use this map and test out new activities, having a space to add lessons they tried and how they went is one way to keep the map up-to-date as a living resource. Some information you could add to points in this layer may be activity title, grade level, date/weather conditions, standard attempted to cover, materials/considerations needed, link to lesson plan, and gauge of perceived success or any comments about the activity.



# Unique Areas

Does your schoolyard have a nature trail, large vegetable garden, or other more complex feature? If so, creating a separate layer for the area will likely be helpful. Dogwood Elementary School, one of our partner schools, has a wonderful nature space in their schoolyard with a trail, rows of benches, an observation deck, and more. On their digital schoolyard map, we created a separate layer to mark the trail and add points for trailheads and other features in the nature space.



A digital schoolyard map is most useful when it is viewed as a living resource- something that is regularly updated as new school needs and experiences arise. To ensure your map stays relevant, add new layers and map features that fit the unique opportunities and barriers at your school. Adding in the distance to the nearest entrance or bathroom, best spots for teachers to take their students outside for the first time, or rules and regulations for the outdoor spaces at your school are just some of the additions you could make to your map as staff becomes more interested in the schoolyard.

Another way to ensure accessibility to your schoolyard map is to share it with others who interact with the schoolyard or save it in a central location. Since Google My Maps is part of G Suite, you can easily share, collaborate, and save your map in Google Drive.

# Get Your Community Engaged

While mapping your schoolyard has many benefits for school staff and partners, it is also a unique opportunity to get the surrounding community involved and more invested in the school.

Faculty and students from nearby colleges may be interested in mapping the schoolyard to use data for research. Your local health department may want to figure out walking routes around the schoolyard and near the school for students to get more physical activity during the day. Sierra Club chapters, nature centers, Boys & Girls Clubs, and other organizations that lead youth programs would likely want to see what potential activities they could facilitate in the schoolyard. In addition to organizations and government offices, parents and community members could be interested in exploring the school's outdoor space to better understand how they can use the schoolyard and what opportunities for moments of wonder and discovery exist.

There are a number of ways that you can get these folks involved in the mapping process depending on the needs of your school and community. Community engagement in the project could be as simple as sending a survey to folks to see how they have interacted with the schoolyard and what questions they have. Alternatively, focus groups could be created to meet with different groups in the community to assess the school grounds from multiple perspectives.

If you're interested in inviting your entire community to explore your outdoor space, your school could host an "Expedition Schoolyard" event where parents can see where their children get to explore, discover, and learn in nature, local organizations can lead activities that showcase the engagement opportunities that exist in the schoolyard, community members can get more familiar with how they can interact with the schoolyard, and students can lead mapping activities that help develop their social and emotional skills as well as teach them classroom topics in a much more experiential and personal manner. Such an event would likely develop and strengthen partnerships, create much more community support for the school, and potentially even reduce vandalism by encouraging more school pride amongst your neighbors.



# Potential Map Expansions

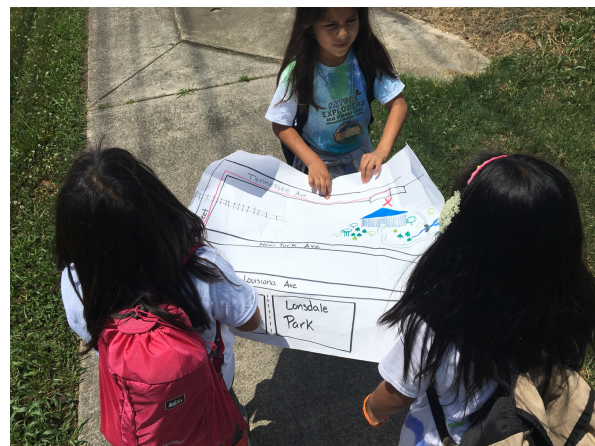
## Expand Map Boundaries

Once you create a map outlining what your schoolyard has to offer, you can expand your map's boundaries to include resources in the surrounding community. Is there a community garden in your neighborhood? What about a city park or greenway? Including community resources and partners to your map is a great way to get a more holistic view of what opportunities exist around your school.



## Use the Map as a Base for Educational Activities

While a schoolyard map is useful for planning outdoor learning experiences, the map itself can be a source of classroom content! Using your schoolyard map to talk about geography, geology, water, biology & ecosystems, and other topics is a great way to make the lesson more personal, local, and relevant. Check out the [U.S. Geological Survey's Teacher Resources](#) for more mapping activities.



## Certify Your Schoolyard

While surveying your schoolyard, did you ever stop and think to yourself “wow, we have a really incredible natural space just outside the school”? If so, you can apply to certify your schoolyard as a [Certified Wildlife Habitat](#) or an [official arboretum](#)! Certifying your school grounds recognizes the incredible environment your students have the opportunity to engage in and provides you with benefits from the certifying organization.



# Additional Resources

While Tremont Institute has found this mapping strategy to work well for these partner schools, every schoolyard is unique and this guide may need to be adapted to the unique needs of your school.

If you map your schoolyard, we would love to hear about it! Please send your maps, discoveries, and questions to Education Director John DiDiego at [john@gsmit.org](mailto:john@gsmit.org).

To access additional resources for schoolyard mapping as well as standards-based schoolyard curriculum, visit Tremont Institute's Educator Resource page at <http://gsmit.org/educator-resources/>.