

Activity: Schoolyard Mapping Exercises

Overview: Students become familiar with the terrain, structures, plants and signs of habitats around their schoolyard by drawing a sketch map. Students can return to this map to organize spatial data regarding the location of weeds, native plants, and other elements of their schoolyard. We will be focusing on water.



Benchmarks:

- 5.1.3.4.1 *Use appropriate tools and techniques in gathering, analyzing and interpreting data. For example: Spring scale, metric measurements, tables, mean/median/range, spreadsheets, and appropriate graphs.*
- 5.1.3.4.2 *Create and analyze different kinds of maps of the student's community and of Minnesota. For example: Weather maps, city maps, aerial photos, regional maps, or online map resources.*
- 5.4.4.1.1 *Give examples of beneficial and harmful human interaction with natural systems. For example: Recreation, pollution, wildlife management.*

Learning Objectives:

1. Students will be able to use student created maps to determine water flow, possible erosion areas, habitat, and plant diversity.
2. Students will be able to use their maps to describe to each other what they observed in their schoolyard.
3. Students will be able to figure out solutions to decrease harmful human interactions with natural systems. Example: how paved surfaces can increase flooding in a river system.

Teacher Tip: It is best to split this activity into two days so not to feel rushed.

Materials needed:

- Graph paper
- Pencils
- Compass
- Drawing boards

Session 1:

Organize students in a circle and explain that they are going to make sketch maps of the schoolyard. Show them the Mapping the Schoolyard PowerPoint.

Ask Students:

- What are some of the things we should consider putting on our maps?

Teacher Tip - include the following areas on the map:

- *Major plant areas: Trees, Lawn, Shrubs*
- *Terrain: Where land slopes*
- *Structures: Buildings, Fences, Gates, Storm drains Downspouts,*
- *Parking areas, paved areas, playground areas, playing field areas*
- *Where water runs off their schoolyard, and any resulting erosion*
- *Scale- have students measure an object outside and create a scale for their map*
- *Key or Legend with colors/symbols to represent objects, surfaces, etc.*

Explain to students that a map has a heading direction (North, South, East, and West) normally noted somewhere on it. Why would it be important to include this on the maps?

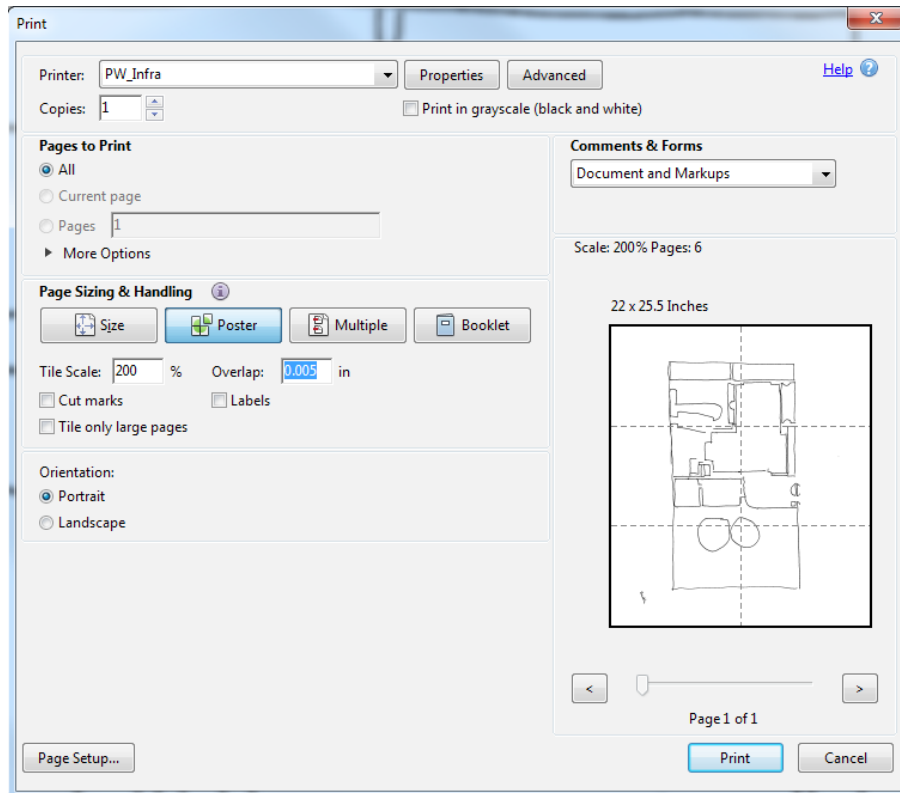
Ask the students to imagine that they are flying over their schoolyard when they are making their maps. This is called a MAP VIEW. **With the class you will create a legend or key for your maps so all the students use the same**



symbols and colors to represent the things they find in the schoolyard. Satellite images of the school yard are available here: <http://www.johnadamsmms.new.rschoolday.com/page/3947>

Split the class into groups of two or three. Have students work together to draw a map that represents all of the things outlined in the activity. Find your school's map here: <http://www.johnadamsmms.new.rschoolday.com/page/3947> When printing the document, do the following:

1. Choose poster
2. Change "Tile Scale" to 200%
3. Click print and you will get 6 sections of the map. Assign 2-3 students per section.



Give students 20-30 minutes to work outside. Make sure you go over the expectations for behavior during this lesson. You might want to create your own map ahead of time to have an example of what you expect from them.

Session 2:

Start the session by reviewing what students did previously. Have students share their maps with everyone and explain some of the major features or things they found as they explored. Did they notice where water runs off of the school yard and the results of unchecked runoff?

After students have shared, take an outdoor class walk and complete the “**Schoolyard Report Card**” activity. We want them to pay particular attention to water issues, where water runs off, why water is running off instead of sinking into the ground, what plants or elements either slow down run off water, or speed it up. For instance, note the evidence of runoff from a grassed area, a paved area, a graveled parking lot, the playground (note how far down the slope the rubber tire fragments have been washed), playing fields, and areas where there is no grass and the soil is packed down from heavy use. Teachers can bring water bottles to test where water soaks in/runs off. Let students share what they discovered.

This activity will be important for the collaboration with the 8th graders at the middle schools. They will be investigating where raingardens should be placed. Students can send their maps to interested 8th graders to use in raingarden planning.





Curriculum developed in 2013 by the City of Rochester, Minnesota - Storm Water Management Division.
Learn more about “Keeping it Clean” by visiting: www.rochesterstormwater.com

