

Potomac Valley Audubon Society
**Classroom Preparation for
Outdoor Experiences**

Potomac Watershed Partnership, December 11, 2012

Can we teach kids to value clean water and to protect natural spaces from within the school classroom ?



How can we get into the
classroom to do that?

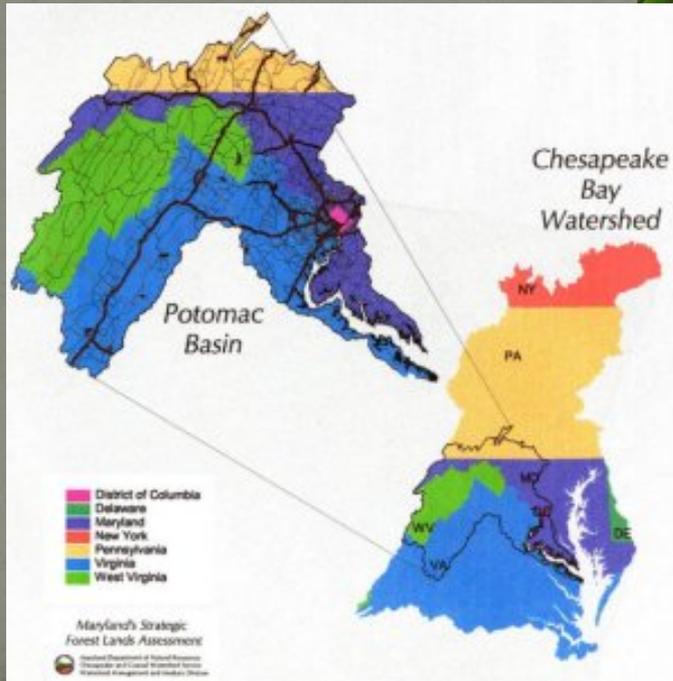
Watershed Works

- 10-hours
- 6 classroom sessions
- 4 hour field trip



Watershed Works

- Students connect their own school's watershed with that of the Chesapeake Bay



Watershed Works!



- Based on a Community Needs Assessment conducted in 2001.
- Program developed in conjunction with teachers: what did they need and how did they need it delivered?

How?

- Make sure there is a need
- Hands-on
- Age-appropriate



How?

- Develop a program that teachers will want because they can't do it better or cheaper!



How?

- Something teachers won't do themselves... but want for their students
- Make it fun or at least so different it stands out



How?

- Tied tightly to the standards of learning



Watershed Works!

- Find a grant! PVAS's program was originally funded through an EPA B-WET grant



In the beginning...

- Piloted in 2003 in 4 schools.
- Currently offered in 14 schools,
 - 53 classes during 2012-13
 - About 1500 students



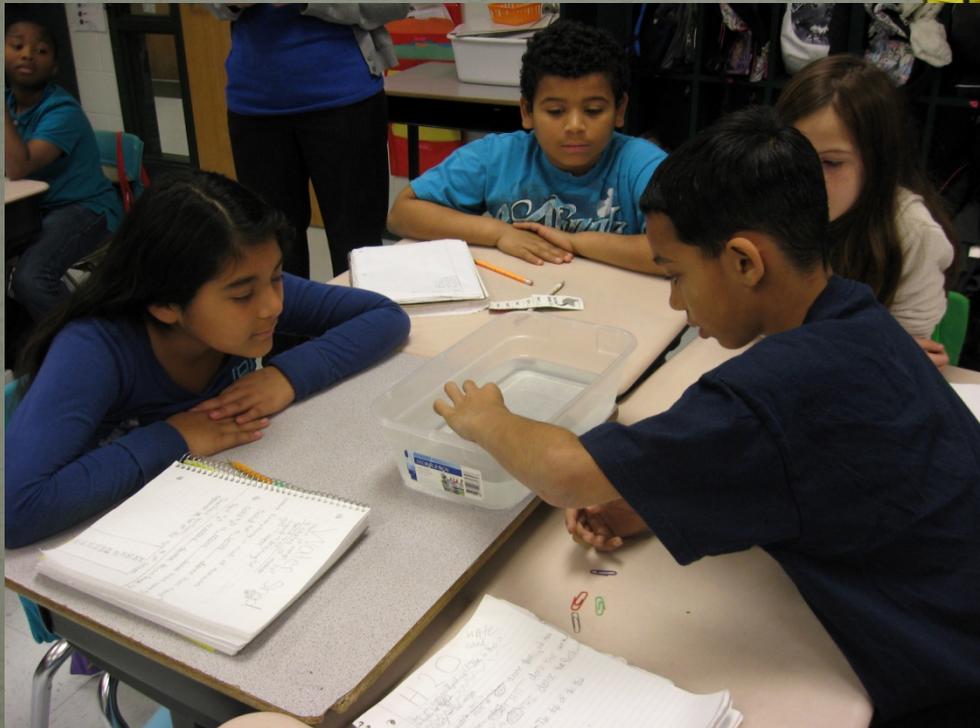
Planting seeds takes serious thought and planning



The watershed program spreads from school to school because teachers talk



Hands on Science



Understanding the Schools

- Anything done in school MUST support learning objectives

West Virginia <http://wvde.state.wv.us/policies/csos.html>

Maryland <http://mdk12.org/assessments/vsc/index.html>

Maryland

http://marylandpublicschools.org/NR/rdonlyres/EC79EC27-40BF-4017-894B-63A12A89A3D1/31625/MD_ELIT_STANDARDS.pdf



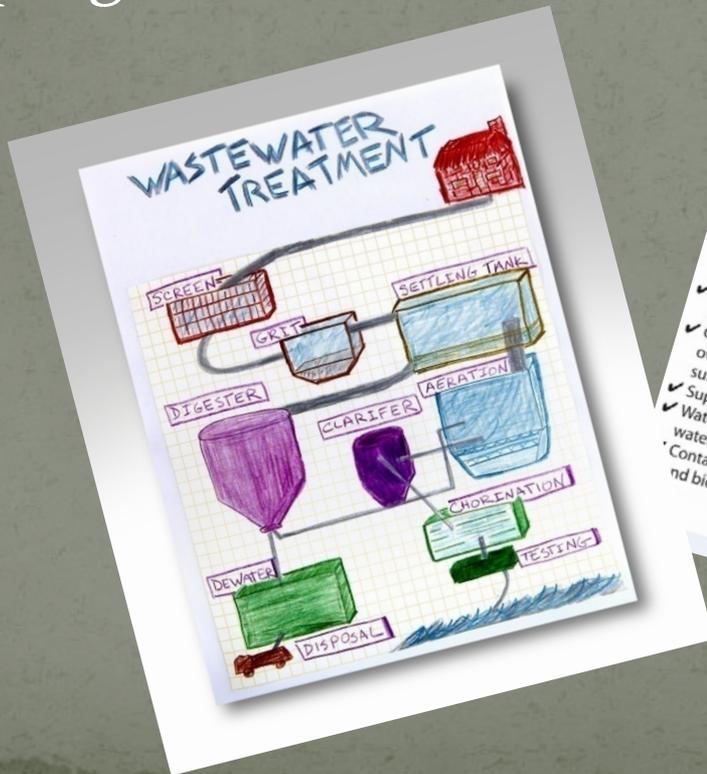
Understanding the Schools

- Plan in advance—next semester rather than next week



Understanding the Schools

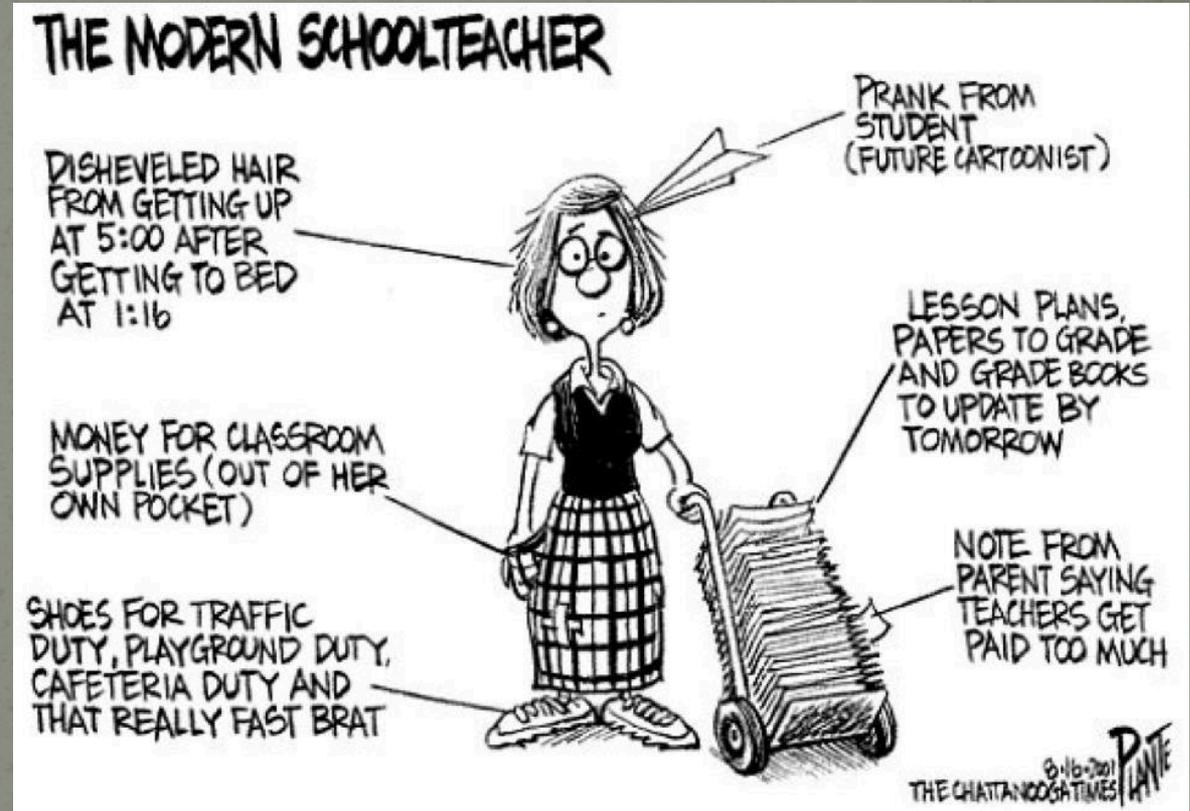
- Have a plan with specific objectives.
- The principal has to agree to any programs



LESSON PLANS: SUGGESTED TOPICS & ORGANIZATION:			
<p>Water Basics Integrated Water Cycles Water Footprints</p> <p>Basic understanding about water cycles, fresh surface water and groundwater supplies.</p> <p>CLASSES: Environmental Science, Biology, Social Studies, Economics, Political Science, Public Speaking, Spanish</p> <p>TOPICS:</p> <ul style="list-style-type: none"> ✓ Integrated water cycles - surface & groundwater ✓ Groundwater, recharge & overdrafting, Defining sustainable systems. ✓ Supply & human demand water ✓ Water footprints & virtual water ✓ Contaminants - chemical and biological 	<p>Past Water History Pre-Industrial Revolution</p> <p>History of human water use. How water created or destroyed civilizations.</p> <p>CLASSES: Environmental Science, History, Biology, Social Studies, Economics, Political Science, Public Speaking, Spanish</p> <p>TOPICS:</p> <ul style="list-style-type: none"> ✓ Ancient Cities: Mesopotamia, Rome ✓ Colonial US ✓ Western US ✓ Aztec & Mayan Empires ✓ India / Pakistan / China ✓ Argentina ✓ Kalahari Desert 	<p>Present Water Systems & Conditions from 1900 - 2010</p> <p>Present global fresh water conditions and how they developed</p> <p>CLASSES: Environmental Science, Biology, Social Studies, Economics, History, Political Science, Public Speaking, Spanish</p> <p>TOPICS:</p> <ul style="list-style-type: none"> ✓ Energy-water connection ✓ Infrastructure ✓ Agriculture & industrial water footprints ✓ Sanitation & health issues ✓ Privatization issues & the value of water ✓ International resource conflicts & resolutions 	<p>Future Global & Local Predictions & Emerging Possibilities</p> <p>What is predicted if all nations continue their current water use. Crisis and hopeful outcomes</p> <p>CLASSES: Environmental Science, Biology, Social Studies, Economics, Political Science, Spanish</p> <p>TOPICS:</p> <ul style="list-style-type: none"> ✓ Sustainability practices for water use ✓ Emerging technologies ✓ Emerging sustainability practices (rainwater harvesting, gray water, permaculture) ✓ Falling water tables ✓ Food security ✓ Waterborne diseases ✓ Environmental refugees

Understanding the Schools

- Teachers have goals to meet and non-negotiable deadlines
- Be prepared for last minute changes and snafus



Understanding the Schools

- The school secretary is the most important person for you to “make nice” with.

**I'm A School
Secretary...**

What's Your



**SUPER
Power?**



Understanding the Schools

- Using pictures of students , where their face is recognizable, requires parental permission.
- You can get a good photograph without showing the face.





THINGS WE'VE LEARNED OVER TEN YEARS



Fourth Graders Don't Drive



So you have to take the program to the students





Buy a car with lots of room because...

There's a ton of stuff to haul around



Teachers will participate in the program, but...



They want you to teach it





When you
dump
water all
over the
classroom
floor,
teachers
will forgive
you to your
face...

**We don't know what
they are really
thinking.**

It snows in
West
Virginia so
adding
snow days
into the
schedule...



Means you stay
on schedule for
spring planting
projects





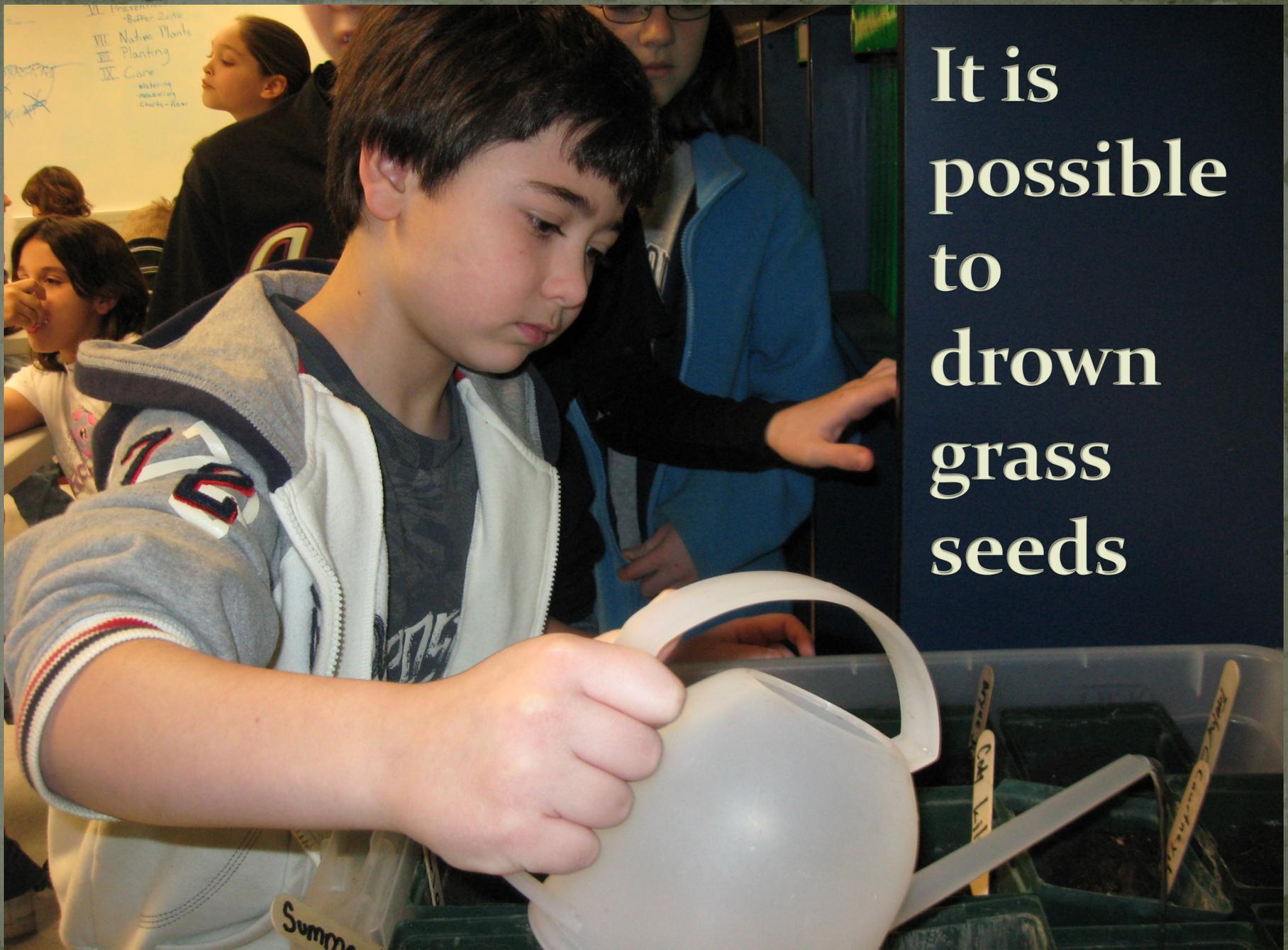
Plain ol' maps are fascinating, even if they are low-tech.



Low-tech can be irresistible .

The scientific method is an important concept to stress.





It is
possible
to
drown
grass
seeds

Cooperation is not easy for 4th graders to master.



If it doesn't rain in April, the ground in
May is like concrete





Safety
around the
water is
important



To plant is to
believe in the
future

Sometimes
there are
greater things
to consider
than book
learning.



NOTHING replaces connecting the
classroom with a field experience





Connecting kids, to nature builds
environmentally responsible
adults

Other Resources to consider

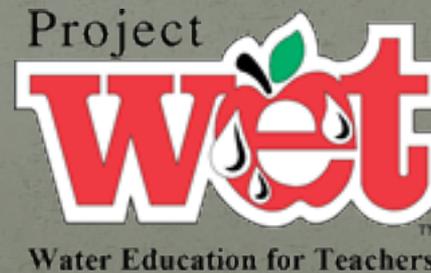
- www.wvdnr.gov

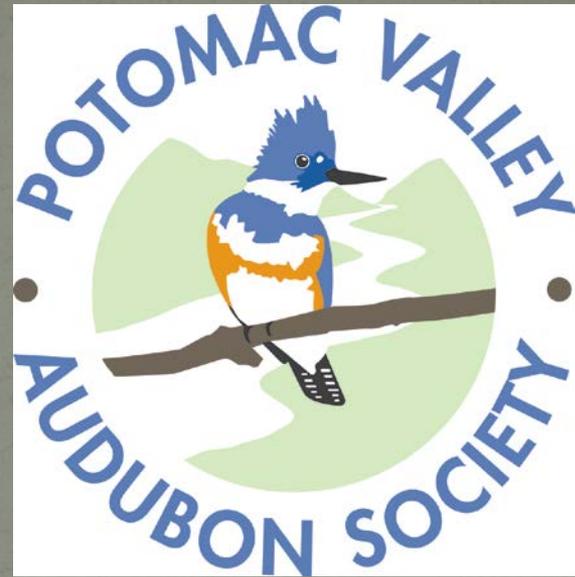


- www.wvforestry.com



- www.dep.wv.gov





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