

## Green School Framework – A Living Document and Work in Progress

### PART III: REQUIREMENTS FOR MARYLAND GREEN SCHOOL RECOGNITION

#### Objective 1 - Curriculum and instruction

#### Criteria - Curriculum and instruction

| 1. Environmental Issue Instruction   | MCPS Science Unit  | Green Kids Core Lesson (Audubon Society)   |
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| <p>Students have opportunities at all grade levels and across disciplines to learn about, study, and address environmental issues in the classroom, on the school site, and/or in the local and regional community. Student experiences are investigative, are an integral part of the instructional program, and are part of a sustained activity. Local actions are related to the local and regional watershed.</p> | <p><b>Kindergarten: (brief overview)</b><br/> <b>Weather:</b> Observations, routines, impact on daily activities, attributes; patterns and observations; water cycle; seasonal changes.</p> <p><b>Plants and Animals:</b> Seasonal changes; basic needs; seeds and life cycles; features needed to survive; plants and animals found in Maryland; external features including comparisons, animal classifications, similarities to humans; animal adaptations.</p>                     | <ul style="list-style-type: none"> <li>▪ <b>Classroom Nature Discovery Center</b><br/>Explore a classroom discovery center with items that teach about living things.</li> <li>▪ <b>Wiggly Worms</b><br/>Learn about nature’s farmers in this hands-on experience with red wigglers.</li> <li>▪ <b>Growing Sunflowers</b><br/>Grow sunflowers in the classroom.</li> <li>▪ <b>Schoolyard Nature Walks: Fall, Winter, Spring</b><br/>Use your senses to explore the schoolyard and observe a tree through the seasons.</li> </ul> |
|  | <p><b>Gr 1:</b><br/> <b>Rocks, Sand, and Soil:</b> Investigate a variety of rocks, sand, and soil. Sort and classify rocks, observe soil components, and investigate various sand particles.</p> <p><b>Weather:</b> Observe the weather and collect and record data about basic weather features including wind, temperature, precipitation, and cloud cover. Record weather observations; construct graphics, and record information on a weather calendar.</p>                       | <ul style="list-style-type: none"> <li>▪ <b>Life in the Soil</b><br/>Look for signs of life in a hoop circle of your schoolyard.</li> <li>▪ <b>Weather Detectives</b><br/>Investigate the weather and water cycle in this hands-on outdoor activity.</li> <li>▪ <b>Worms Eat Our Garbage</b><br/>Make a worm compost bin and observe its changes over time.</li> <li>▪ <b>Structures for the Birds</b><br/>Build bird feeders or bird houses for your schoolyard wildlife habitat.</li> </ul>                                    |
|  | <p><b>Gr 2:</b><br/> <b>The Life Cycle of Butterflies:</b> Observe and record the changes of butterfly larvae from caterpillar to adult. Learn about stages of development and structure of the organisms.</p> <p><b>Liquids:</b> Investigate substances that dissolve and return to their original form. Make solutions, observe evaporation, and discover how some solutions crystallize. Explore properties of liquids which include surface tension, miscibility, and density.</p> | <ul style="list-style-type: none"> <li>▪ <b>Caterpillar Connections</b><br/>Meet a variety of local caterpillars and observe their amazing adaptations.</li> <li>▪ <b>Green Cleaners</b><br/>Make an environmentally-friendly desk cleaner for your classroom.</li> <li>▪ <b>Butterfly Basics</b><br/>Learn about butterfly behavior and habitat needs and create a butterfly habitat.</li> <li>▪ <b>Totally Tree-mendous</b><br/>Investigate the value of a schoolyard tree to people and wildlife.</li> </ul>                  |

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|  | <p><b>Gr 3:</b><br/> <b>Plant Growth and Development:</b> Plant and observe the growth of Brassica rapa. Records of growth are kept and used to construct charts and graphs. Pollinate the flowers with dead bees and harvest seeds.</p> <p><b>Sound:</b> Investigate characteristics of sound. Explore ways that sounds are produced, received, and used in everyday life. Emphasis is placed on developing questions, seeking answers through investigations, recording data, and communicating results.</p>   | <ul style="list-style-type: none"> <li>▪ <b>Go Nuts for Clean Water</b><br/>Study and collect nuts and seeds for the <i>Growing Native</i> conservation program. (SLA)</li> <li>▪ <b>Amazing Amaryllis</b><br/>Learn all about bulbs and grow an amaryllis plant in your classroom.</li> <li>▪ <b>The Economy of Trees</b><br/>Make your own paper while learning about the value of Maryland forests.</li> <li>▪ <b>Bee Informed, Bee Prepared</b><br/>Learn about native bees and their role in pollinating food crops</li> </ul>  |
|  | <p><b>Gr 4:</b><br/> <b>Ecosystems:</b> Observe and work with the model ecosystems. Explore the characteristics of organisms which help them to survive and reproduce in specific habitats and how organisms interact with their environment. Investigate the natural or human-made factors that can disrupt a stable environment and consider how human decisions and actions can be both beneficial and harmful to the environment. Construct and conduct investigations to observe, conclude, and infer about the effects of pollution and/or pollution by-products on the environment.</p> <p><b>Earth Science:</b> Explore materials that make up the Earth's surface. Build on knowledge of matter, in particular that matter is made up of smaller parts. Learn that rocks are made of minerals. Explore fossils to see how fossils of organisms provide insight into organisms and environments of the past. Explore how erosion and weathering impact the surface of the Earth.</p> | <ul style="list-style-type: none"> <li>▪ <b>Watershed in a Pan</b><br/>Construct watershed models to follow rainwater in natural versus built environments.</li> <li>▪ <b>The Science of Decomposition</b><br/>Observe decomposers in action and set up an indoor or outdoor composting station.</li> <li>▪ <b>Erosion in a Bottle</b><br/>Experience how water causes erosion on pervious and impervious surfaces.</li> <li>▪ <b>Fun with Food Chains</b><br/>Become a producer, consumer or top predator in a Chesapeake Bay food chain.</li> <li>▪ <b>Stream Study</b> (in some locations)<br/>Search for aquatic macro-invertebrates and analyze water quality in a local stream.</li> </ul> |
|  | <p><b>Gr 5:</b><br/> <b>Electricity and Magnetism:</b> Explore static electricity and observe how electricity is a part of their everyday lives. Conduct investigations to learn what is necessary for a working electrical circuit. Explore magnetism in order to gain insight into how electricity and magnetism are related.</p>  | <ul style="list-style-type: none"> <li>▪ <b>Greenhouse Effects</b><br/>Explore how greenhouse gases make life on Earth possible. (Grade 5: Solar Energy &amp; the Power of the Sun)</li> <li>▪ <b>Watt's Up?</b><br/>Use tools such as watt meters to measure electrical use in your classroom. (Science Unit: Electricity)</li> </ul>   |

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|  | <p>Complete the unit by using the Well Designed Investigation format to develop their own inquiry projects to test variables that may affect an electromagnet.</p> <p><b>Astronomy:</b> Observe the properties of Earth that make it possible for life to survive on it in comparison to other planets and celestial objects. Investigate the relationship between Earth and the Sun and the properties of that relationship that make it possible for the survival of life. Observe how the Sun, the Moon, other celestial bodies, and the patterns of celestial events are a part of their lives. Investigate how the properties of light affect what they see.</p> <p><b>Cells and Heredity:</b> Review the properties of light that make it possible for them to observe objects in space using a telescope, and then add to knowledge regarding the properties of light that enable them to use a microscope to look at microscopic specimens. Use a microscope and observe prepared slides of plant and animal cells. Review the characteristics of living things and then focus on cells, identifying the differences between plant and animal cells and types of specialized cells needed by a multi-cellular organisms. Introduced to genetics, the differences between inherited traits and learned behaviors, and why offspring resemble their parents, but are not identical to them.</p> | <ul style="list-style-type: none"> <li>▪ <b>The Gene Scene</b><br/>Learn about genetic diversity and why it's important within populations.</li> <li>▪ <b>Living off the Land</b><br/>Explore the colonial use of Maryland plants for food, shelter and medicine. (Social Studies Unit 2 Economics: Creating a New Nation</li> <li>• Social Studies Unit 3 The Evolving Country: Geography, Past and Present)</li> </ul> |
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**2. Professional Development**

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| <p>Members of the school staff are involved in professional development or other training activities that enhance environmental awareness, literacy, knowledge, skills, and/or related instructional strategies.</p> | <p><b>Representatives</b> from primary, secondary, media, administration, and ESOL attended the Chesapeake Bay Foundation Outdoor Education Training focusing on the Ecosystem of the Chesapeake Bay.</p> <p><b>Various</b> outreach programs are being created to convey the new found knowledge to the school staff.</p> <p><b>Our first</b> session for pre-service, for the 2009-2010 school year, was held in our new science lab, with over 60 minutes on the agenda discussing <i>No Child Left Inside</i>; Green School Lesson (30 minutes of which were held outside).</p> |
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### 3. Celebration

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| <p>The school recognizes and celebrates student and staff achievement in the implementation of environmental best management practices in the operation, design, and maintenance of the school building and grounds and in developing active partnerships with the community. The school serves as a model in which these experiences are shared beyond the classroom and with the community. The school reflects on its accomplishments, relating small and large achievements to the larger picture of how schools fit in the ecosystem.</p> | <p>We celebrate:</p> <ul style="list-style-type: none"> <li>▪ The student SERT Team</li> <li>▪ The staff/student Recycling Program</li> <li>▪ What students accomplish during the year-long Science Club and Science Inquiry Conference.</li> <li>▪ The student achievements at the annual science fair.</li> </ul> |
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## Objective 2 - Operation, design and maintenance of school building and grounds

### Criteria - Operation, design and maintenance of school building and grounds

| Issue   | What CG is Doing  |
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| <b>1. Water Conservation and/or Water Pollution Prevention</b>  |   |
| <p>The school and/or students practice water conservation and/or water pollution prevention. Examples include “Bay starts here” stickers on faucets, rain gardens, erosion control measures and storm drain stenciling.</p>                                 | <p>Science lab will have:</p> <ul style="list-style-type: none"> <li>▪ Watershed Models</li> <li>▪ Erosion Models</li> </ul> <p>SERT will create stickers for faucets, etc.</p>   |
| <b>2. Energy Conservation</b>   |   |
| <p>The school and/or students practice energy conservation. Examples include reminders to turn off the lights, calculating your school’s carbon footprint and finding ways to reduce that footprint, and conducting an energy audit.</p>                    | <ul style="list-style-type: none"> <li>▪ SERT inspections, twice a week.</li> <li>▪ Stickers/posters around the school</li> <li>▪ Students encouraged to turn off lights/computers when viable.</li> <li>▪ TV news crew announcements: Did You Know-Fun Facts.</li> </ul>   |
| <b>3. Solid Waste Reduction</b>   |   |
| <p>The school and/or students practice solid waste reduction, reuse, and/or recycling. Examples are collecting cell phones and ink cartridges for recycling, reducing how much printing the school does, and sponsoring a “no waste lunch” day or week.</p> | <ul style="list-style-type: none"> <li>▪ We are implementing additional recycling programs, to include yoghurt containers; juice pouches</li> <li>▪ Recycling Team</li> <li>▪ Ink Cartridges – Staples</li> <li>▪ Electronic Communication</li> <li>▪ Our fund raiser this year is selling reusable grocery bags, with a logo that will be created by our students in a competition.</li> <li>▪ No long have paper staff handbooks, etc. Everything is digital.</li> <li>▪ Newsletters posted on the Web to cut down on paper.</li> <li>▪ Encourage reusable lunch bags.</li> </ul> |

| <b>4. Habitat Restoration</b>   |  |
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| The school and/or students design/enhance, implement, and maintain natural habitat restoration areas on the school grounds or in the community. Examples are native plant gardens, butterfly gardens, wetlands, rain gardens, and meadows.  | <ul style="list-style-type: none"> <li>▪ Growing and planting indigenous/native plants</li> <li>▪ Build a rain garden around portable area to slow down run-off.</li> <li>▪ Weeding and maintaining the Courtyard area by having each grade level sponsor a section of the courtyard for the year.</li> <li>▪ Replanting front area of the school keeping indigenous plants/runoff in mind.</li> </ul> |
| <b>5. Building Structures for Learning about the Environment</b>  |  |
| The school and/or students design or implement structures or green building components that enhance environmental learning or improve habitat. Examples are bluebird houses, trails, signage on gardens and trails, pervious walkways, viewing blinds, green roofs, composting toilets or outdoor classrooms.                             | <ul style="list-style-type: none"> <li>▪ Created a science lab based on findings from CBF training.</li> <li>▪ Instigating courtyard as an outdoor classroom to encourage “No Child Left Inside.”</li> </ul>   |
| <b>6. Responsible Transportation</b>  |  |
| The school and/or students promote and provide responsible transportation options. Examples are carpooling, walking, biking, use of public transportation, and the use of rain gardens, pervious pavement and curb cuts for storm water runoff.   | <ul style="list-style-type: none"> <li>▪ Due to the location of Cedar Grove, on Route 27, a major road in Montgomery County, the school has very few walkers. (7 out of 320).</li> <li>▪ Reducing bussed field trips; encouraging in-school field trips.</li> </ul>  |
| <b>7. Healthy School Environment</b>  |  |
| The school buildings and grounds are managed and maintained to ensure that all students and staff enjoy the benefits of clean air, clean water, and a healthy learning environment. Examples are the safe use of chemicals, an Integrated Pest Management plan, indoor air quality and the purchase of environmentally friendly products. | <ul style="list-style-type: none"> <li>▪ Media Center has instigated an air quality control program.</li> <li>▪ Building Service programs here.</li> </ul>   |

**Objective 3 - School community**

| <b>Criteria - School and community</b>  | <b>What CG Does</b>   |
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| <b>1. Community partners in the local community</b>   |   |
| The school encourages and supports student, staff, and community partnerships that address environmental issues in the local community. | <ul style="list-style-type: none"> <li>▪ School sponsored community yard sales encourage recycling.</li> <li>▪ School sponsors toner/ink cartridge recycling program at local Staples.</li> </ul>           |
| <b>2. Community partners at the school</b>  |   |
| Community partners encourage and support students and staff to develop and implement solutions to environmental issues at the school.   | <ul style="list-style-type: none"> <li>▪ Staff, students, and parents partnered to clean up courtyard including fixing and building sheds to house equipment to create a safe outdoor classroom.</li> </ul> |