

## Green Schoolyard Initiative

### In Partnership with the Dan River Basin Association

Albert Harris Elementary School's courtyard has transformed into a hands-on outdoor learning environment where students participate in real world learning experiences that make STEM (Science, Technology, Engineering, and Mathematics) and Science Standards of Learning meaningful and engaging. Students learn core content in an integrated fashion that mirrors the world they live in. The big ideas of science are taking root now and will yield results far into adulthood. Students take their learning home and families are starting to recycle materials, plant flower gardens and vegetables, and even weather watch.

The Second Year of our Green Schoolyard Initiative Includes:

A Tasting Garden planted with a mixture of greens that will be harvested throughout the winter. The tasting garden is a great way for students to learn about the life cycle of plants in a hands-on way they are sure to remember.

The tasting garden also teaches students how planting a garden of greens can help reduce erosion in an area impacted by ground water runoff.

Science SOLs: Big Ideas- **Living Systems and Processes** K.7 Plant life cycle, 1.4 Plant life needs, plant classifications, & functional parts, 2.4 orderly changes throughout plant life cycle, 2.5 how habitats meet a plants' needs, 3.5 role of plants in food offspring, 4.3 interrelationships between plants and animals in an ecosystem, how they function in food chain, **Earth and Space Systems** K.10 slow change occurs when water erodes soil, 1.7 and 2.7 effect of weather & seasonal change on plants (winter garden), 3.6 role of soil in plant growth, **Earth's Resources** 1.8 plants as natural resources, 2.8 plants reduce impact of wind and water, 4.8 role plants play in reducing erosion, 5.8 water's role in weathering and erosion

*Life Science and Biology*

New Storm Drain Marking to remind students to dump no waste, that whatever enters a storm drain will go into the river. Each student received information about storm drains to share with their families. Students are learning how their actions affect others because we all live downstream.

Science SOLs: Big Ideas- **Matter**- K.4 Water flows downhill, how water flows in the community, 1.8 Water is a natural resource, Living Systems and Processes- 3.5 Water is a nonliving component of the environment, **Earth & Space Systems**- 3.7 major local water sources, **Earth's Resources**- 3.8 analyze the effects of human influences on the quality of water, research, explain,

and communicate methods of water conservation to be used in homes and schools, 4.8 watersheds in VA, 5.9 consequences of water pollution.

*Grade Six Science Content, Life Science, Biology, and Earth Science*

**A Weather Station including a weather vane, a whiteboard for recording observations, two types of thermometers, a windsock, a rain gauge, and a handheld anemometer. Students are able to measure weather phenomena and record their data to use in predicting future weather events. Students will also be able to use their data in math activities resulting in lessons that are more meaningful and personal.**

Science SOLs: Big Ideas **Earth and Space Systems**- K.9 daily weather conditions including patterns in nature (seasonal), K.10 changes brought about by weather- fast or slow changes, 1.6 investigations with temperature, directional pattern of sun rising and setting, 1.7 observe, record, and compare weather and seasonal changes, represent weather data in tables, 2.6 tracking weather allows us to prepare for the weather and storms, observe, describe, and record daily weather conditions using weather instruments; graph and analyze data to identify patterns; predict weather based upon identified patterns, 2.7 investigate weather patterns and seasonal change as they impact animal and plant life, 4.4 analyze and report data on temperature and precipitation, differentiate among the types of weather associated with high-pressure and low-pressure air masses, use weather instruments (thermometer, barometer, rain gauge, anemometer) and observations of sky conditions to collect, record, and graph weather data over time; analyze results and determine patterns that may be used to make weather predictions, discuss the importance of monitoring weather data to make weather predictions

*Grade Six Science Content and Earth Science*

**Environmental education for students at all grade levels will receive greater attention under the New Green Deal program of the Biden-Harris administration. The Green Schoolyard initiative allows our students to start building their 5C's skillset of critical thinking, communication, creative thinking, collaboration, and citizenship skills. A STEM education prepares students to be future ready graduates. Students are developing the mindset that they are responsible stewards of their environment.**

**Our First Year of the Green Schoolyard Initiative included:**

**A Certified Monarch Butterfly Waystation with Interpretive Signage that allows students to watch as the life cycle of the Monarch Butterfly unfolds before them.**

**Students experience what they are learning in the classroom as it comes to life before them.**

Science SOLs: Big Ideas **Living Systems**- K.7 animal basic life needs, life cycle, and offspring, 1.5 animal's basic life needs, classification of animals, 2.4 animals (butterflies) have orderly changes as they grow and develop, 2.5 living things are dependent on their living and nonliving surroundings, an animal's habitat provides all of its needs, 3.4 animal's physical adaptations, 3.5 relationships in an ecosystem, 4.2 animals role in pollination, how butterflies obtain food, butterfly reproduction, **Earth and Space Systems**- K.10 change can be fast or slow, 1.7 weather and seasonal change impacts animals, 2.7 weather patterns and seasonal change, animal migration (Monarchs migrate to Mexico each year), **Earth's Resources**- 1.8 animals are a natural resource, 2.8 plants provide many basic life needs for animals (plants in waystation planted specifically for the role they play in a monarch's life cycle, 4.8 animals are a natural resource

*Grade Six Science Content, Life Science, and Biology*

**A Rain Barrel System that collects rainwater that students use to water plants in the waystation and tasting garden. They are learning how to conserve water while caring for their plants.**

Science SOLs Big Ideas **Matter** K.4 Sources of Water- rain collected in barrels to water plants, 1.4 water from rain barrels to water plants, 2.3 Use of water at school, **Earth's Resources** K.11 human choice impacts water, 1.8 water is a natural resource, 3.8 analyze the effects of human influences on the quality of water, research, explain, and communicate methods of water conservation to be used in homes and schools, observe water use in the school setting and identify possible water conservation solutions, collaboratively design and implement a plan to conserve water at home or at school, 5.9 water conservation

*Grade Six Science Content and Life Science*

**A Classroom Composting System with Compost Bins reduces fruit and vegetable waste when students have snacks. This developed as a result of a first grade Problem Based Learning activity where students were concerned about the amount of trash they were throwing away.**

Science SOLs: Big Ideas **Earths Resources**- K.11 Conserving natural resources, communicate solutions that will reduce the impact of humans on the land, air, water, and on other living things in the local environment, 1.8 determine a resource in the school or home that may be conserved, brainstorm solutions, and implement a plan to address the conservation concern

*Grade Six Science Content*