



## ECO-SCHOOLS PATHWAYS TO SUSTAINABILITY ALIGNMENT TO THE GLOBE PROGRAM

### PEDOSPHERE INVESTIGATION

Data collection of soil temperature, moisture, and physical and chemical properties is invaluable to scientists in many fields: **soil scientists** use the data to better understand their potential for plant growth; **hydrologists** use the data to determine potential sedimentation in water bodies; meteorologists and **climatologists** use soil data in climate prediction models as soils can affect humidity and temperature; **biologists** use soil data to understand its potential for supporting plant and animal life; and **anthropologists** study the soil in order to reconstruct the human history of an area. Students and scientists investigate soils through the collection of data using measurement protocols and using instruments that meet certain specifications in order to ensure that data are comparable.

#### ECO-SCHOOLS USA PATHWAY



##### BIODIVERSITY

Investigate and increase biodiversity at school and within the community.



##### CLIMATE CHANGE

Find meaningful lasting ways to reduce the school's carbon footprint.



##### CONSUMPTION AND WASTE

Analyze and address the full life cycle of a school's products including what teachers, staff and students consume.

#### GUIDING QUESTIONS TO SUPPORT INTEGRATION

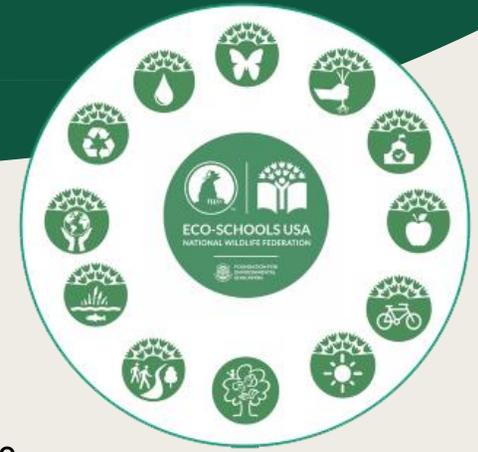
What is the relationship between soil fertility and soil moisture to a wildlife **biodiversity** in our community?

How can we begin to understand our soil profile and how it has changed **over time**? What are the variables that contribute to changes in our soil over time?

What is the relationship between soil chemistry and the amount of **litter/waste** found on and in the soil? For example, is soil chemistry different at a land fill versus the schoolyard?

## PEDOSPHERE INVESTIGATION, PAGE 2 OF 3

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### ECO-SCHOOLS USA PATHWAY



#### HEALTHY SCHOOLS

Eliminate toxics and hazardous materials by replacing them with clean, green products practicing proper methods of disposal, both inside and outside the school.

### GUIDING QUESTIONS TO SUPPORT INTEGRATION

Is there a difference between soil temperature and soil pH in **soils treated synthetically** and **soils treated organically**?



#### LEAF

Identify forest systems and the roles they play in the environment, a community and the economy.

How does the soil profile change when **urban deforestation** due to development occurs?



#### SCHOOLYARD HABITATS

Design, develop and maintain sustainable gardens as laboratories for learning, community building and as safe places for reflection and mindfulness.

What role do soil properties play in the planning and preparation of a **schoolyard habitat** designed for monarch conservation?

## PEDOSPHERE INVESTIGATION, PAGE 3 OF 3

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#### SUSTAINABLE FOOD

Sustainable solutions to reduce travel footprints by investigating consequences and evaluating solutions.

### GUIDING QUESTIONS TO SUPPORT INTEGRATION

How are the soil requirements different for **food gardens** versus pollinator gardens?



#### WOW, WATERSHEDS, OCEANS AND WETLANDS

Water connects us all and usable water is finite. Investigate the health of bodies of water small and large, identify the habitat requirements of plant and animal species and instill a stewardship and conservation ethic.

What is the relationship between the blue carbon stored in the sediments of **coastal ecosystems** and development for tourism?