Preserving the Past On-Site Lesson Plan

Time	4 hrs
<u>Standards</u>	**Band Theme 5-8: Science Inquiry and Application:** • Identify questions that can be answered through scientific investigations; • Design and conduct a scientific investigation; • Use appropriate mathematics, tools and techniques to gather data and information; • Analyze and interpret data; • Develop descriptions, models, explanations and predictions; • Think critically and logically to connect evidence and explanations; • Recognize and analyze alternative explanations and predictions; and • Communicate scientific procedures and explanations. **Content Statement 6.ESS.4** Soil is unconsolidated material that contains nutrient matter and weathered rock. CCSS.ELA-Literacy.RST.6-8.3 ● Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
Objectives	● Follow a multistep procedure to determine if the soil within an historic landscape will continue to promote optimal health and survival of its plants over time. ● Use appropriate mathematics, tools and techniques to gather data and information. ● Develop descriptions, models, explanations and predictions.
Materials	● Student Manual ● Test kits ● Safety goggles and glovesClipboard and Stopwatch ● Pencil
Anticipatory set	● Students arrive and are reintroduced to the problem and a brief history of the Plane Tree Allee and Dell areas. ● Break the students into their experimental groups. ● As the students look at the Plan Tree Allee and Dell discuss if the area looks healthy. Based on what they observe, do they think the soil and plants look healthy? ● Have the students revisit their hypothesis. Do they wish to change or keep it based on what they have seen?
Procedures	• Take the students to their color assigned sampling zone. • Record a prediction of what their results may be based on their observations. • Check that all safety precautions are being met and that materials are laid out. • Make sure to accurately record all findings: o Date and time o Group o Zone o Test performed o Test results

	○ Nearby plants ***Teacher Note:*** *During down time or while waiting for their tests to dissolve and develop, students can:* ● *Draw a quick sketch of their surroundings.* ● *Perform the soil texture classifications by hand test, just like in class.*
Reflection (Can be done onsite or back at school)	● Did your visual assessment match your test result? ● What was it like performing the test in the field "in person"? ● How might we use all the data we collected today? What might you guess about other test results conducted at Stan Hywet?
Reference	Plant Nutrients: http://www.ncagr.gov/cyber/kidswrld/plant/nutrient.htm (NC Agriculture Plant Nutrients) http://www.ncagr.gov/cyber/kidswrld/plant/nutrient.htm (NC Agriculture Plant Nutrients) Worms: http://urbanext.illinois.edu/soil/SoilBiology/earthworms.htm (Soil Biology Earthworms) Soils • http://earthsci.org/education/investigations/ies/Soils/Soil.htm - Throughout this module, students will use hands-on, inquiry-based explorations to investigate the following in 7 different modules: • the kinds of materials in soil • the arrangement of soil materials • the amount of water the soil can hold • how water flows through soil • http://soilandwater.ohiodnr.gov/swcds/find-a-local-swcd (ODNR • Click on Soil Conservation in the left margin • http://homeguides.sfgate.com/pine-bark-soil-conditioner-101383.html (Pine Fines help condition the soil) • http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu/ (USDA - Soil Education)