Name: _____

Healthy tree

I observe

Date:_____

Unhealthy tree

I observe

Overall STEM Connections for PLT Activity #77 "Trees in Trouble"

• Conduct a check-up of trees in their neighborhood. • Explore the cross-cutting concept of cause and effect. • Learn about the core idea of growth and development in organisms

Correlations to Minnesota 2009 Science Standards

1.1.1.1.1 When asked "How do you know?" students support their answer with observations.
2.1.1.2.1 Raise questions about the natural world and seek answers by making careful observations, noting what happens when you interact with an object, and sharing the answers with others.
2.4.1.1.1. Describe and sort plants into groups in many ways, according to their physical characteristics and behaviors.
3.1.1.1.1 Provide evidence to support claims other than saying "I just know" and question such reasons when given by others.
3.1.1.2.3 Maintain a record of observations, procedures, and explanations, being careful to distinguish between actual observations and ideas about what was observed.
3.1.3.2.1 Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools.
3.4.1.1.1 Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction.
5.1.1.1.3 Understand that different explanations for the same observations usually lead to making more observations and trying to resolve the differences.
5.4.1.1.1 Compare the impact of individual decisions on natural systems.
6.1.3.1.1 Describe a system in terms of its subsystems and parts, as well as its inputs, processes and outputs
7.1.1.1.1 Understand that prior expectations can create bias when conducting scientific investigations.
7.1.1.2.1 (Part B of activity) Generate and refine a variety of scientific questions and match them with appropriate methods of investigation, such as field studies, controlled experiments, reviews of controlled experiments, reviews of existing work and development of models.
7.1.1.2.3 (Part B of activity) Generate a scientific conclusion from an investigation, clearly distinguishing between results (evidence) and conclusions (explanation).
7.1.1.2.4 Evaluate explanations proposed by others in examining and comparing evidence, identifying faulty reasoning, and suggesting alternative explanations.
7.1.3.4.2 (Part B of activity) Determine and use appropriate safety procedures, tools, measurements, graphs, and mathematical analyses to describe and investigate natural and designed systems in a life science context.
8.1.1.2.1 Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.

Overall STEM connections for PLT's "Monitoring Forest Health" activity (grades 9-12)

Students collect and analyze data on a number of different parameters related to a forest area's health. • Assess the health of the forest area based on the data they collected. • Evaluate the ecosystem services provided by trees in the community