Doing Science in the Pine Bush: The Process of Scientific Inquiry

Description: A series of lessons adapted from the NIH Curriculum Supplement Series. The purpose of these lessons is to help students understand the basic aspects of scientific inquiry, the purpose of scientific research and to provide opportunities to practice and refine critical thinking skills.

Age/Grade Level: Grades 6-8

Lessons

Formation Box – An introduction to the basic aspects of scientific inquiry. Students are asked to make observations, ask questions, share information, propose explanations and defend their reasoning, based on a pattern cube relating to the formation of the Pine Bush

Pine Bush Questions- Students will examine questions about the Pine Bush and identify which are testable. Students will convert questions to a testable form.

More Questions- Students will construct testable questions related to actual research activities in the Pine Bush.

Capture/Recapture- Students will conduct a hands-on lab modeling the capture/recapture sampling technique.

*A tough nut to crack: Lupine Germination- Students role-play as members of the Albany Pine Bush Preserve Research team examining an investigation of how best to germinate lupine seeds. Students will examine data, construct testable questions, design investigations, analyze data, summarize findings and propose questions for future study.

*Stopping the Invasion: Aspen Girdling- Students role-play as members of the Albany Pine Bush Preserve Research team examining an investigation of the effectiveness of girdling to reduce an overpopulating species. Students will examine data, construct testable questions, design investigations, analyze data, summarize findings and propose questions for future study.

*Oh Deer: Lupine Browsing – Students role-play as members of the Albany Pine Bush Preserve Research team examining an investigation on the effectiveness of protecting lupine plants from deer by building fenced in exclosures. Students will examine data, construct testable questions, design investigations, analyze data, summarize findings and propose questions for future study.

*On the Shoulders of Giants: New Research- Students write up a complete proposal for possible research to be conducting in the Albany Pine Bush.

*** These lessons can be done as a role play on the computer with students starting at**

http://www.albanypinebush.org/pdf/L1IntrotoSs.pdf

The complete NIH Supplement can be found at:

http://science.education.nih.gov/supplements/nih6/inquiry/default.htm
http://science.education.nih.gov/supplements/nih6/inquiry/guide/nih_doing-science.pdf