La Trobe Wildlife Sanctuary

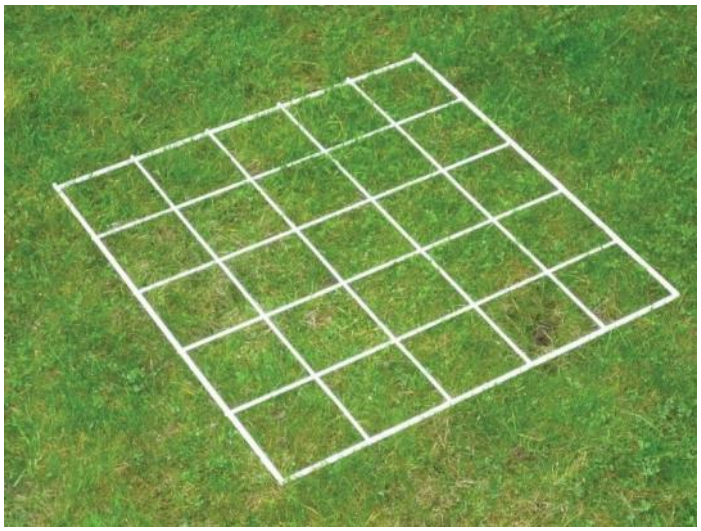
Be There or Be Square (7-10)

In this activity, your students will learn how to do one of the most common sampling methods, the quadrat.

Learning Intention	Success Criteria
Students will be able to use a quadrat to determine the diversity of invertebrates and the plant cover in a 1x1 area.	Students can create a graph to represent their data found in their quadrat.

Student Activity
Your students will be taken to an area in the sanctuary, armed with quadrats. They will place the quadrat on the ground. They will estimate the percentage cover of leaf litter and plants. They will then count all the invertebrates they can find. Using this data they will create a graph to represent the diversity of invertebrates. They will come to a conclusion about the health of this area and the wider implications for the sanctuary.

Learning Outcomes	
Cognitive	Students will understand how using quadrats can give us an indication of an area's diversity. Students will evaluate the extent to which a single quadrat can indicate the overall health of the sanctuary as a whole.
Affective	Students will be interested in the range of invertebrates that live within their quadrat. Students will have a respect for the natural environment around them.
Observational Skills	Students will be able to use a quadrat to determine the diversity within their area.



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Curriculum Links

Year 7-8:

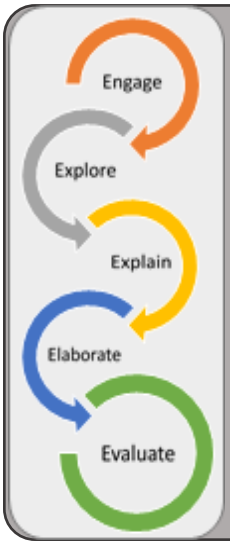
Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (VCSSU090)
There are differences within and between groups of organisms; classification helps organise this diversity (VCSSU091)
Interactions between organisms can be described in terms of food chains and food webs and can be affected by human activity (VCSSU093)
In fair tests, measure and control variables, and select equipment to collect data with accuracy appropriate to the task (VCSIS109)
Construct and use a range of representations including graphs, keys and models to record and summarise data from students' own investigations and secondary sources, and to represent and analyse patterns and relationships (VCSIS110)
Reflect on the method used to investigate a question or solve a problem, including evaluating the quality of the data collected, and identify improvements to the method (VCSIS112)

Year 9-10:

Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems(VCSSU121)
Select and use appropriate equipment and technologies to systematically collect and record accurate and reliable data, and use repeat trials to improve accuracy, precision and reliability (VCSIS136)
Select and use appropriate equipment and technologies to systematically collect and record accurate and reliable data, and use repeat trials to improve accuracy, precision and reliability (VCSIS136)
Construct and use a range of representations, including graphs, keys, models and formulas, to record and summarise data from students' own investigations and secondary sources, to represent qualitative and quantitative patterns or relationships, and distinguish between discrete and continuous data (VCSIS137)
Analyse patterns and trends in data, including describing relationships between variables, identifying inconsistencies in data and sources of uncertainty, and drawing conclusions that are consistent with evidence (VCSIS138)

Summary

Throughout this engaging activity, students will understand the process behind standard sampling methods, using a quadrat. They will learn to measure the diversity of invertebrates and the different factors that affect that distribution, such as plant and leaf litter cover. They will learn to interpret these results in the context of the area, as well as the wider sanctuary. They will discuss the accuracy of this method and to what extent the data can be extrapolated.



A New Pedagogy Deep Learning (NPDL)

The LTWS incorporates the work of Michael Fullan and Maria Langworthy into their activities and support resources.

Instructional Model and incorporate a range of activities designed to develop 21st Century Learning Skills.

The **Be There or Be Square** activity provides an authentic link to a pedagogy for Meaning-Oriented (Deep) learning. The ticks below provide an indication of the skills this activity is designed to develop.

Support Materials

The LTWS have (and are) developing a range of support materials that provide additional resources for teachers to explore this NPDL framework.

Visit our Webpage – www.latrobe.edu.au\wildlife

Keep in touch via the sanctuaries Blog, Facebook and Youtube pages to discover more about the sanctuary and the opportunities your students can explore.

http://bit.ly/1TdbMnN
http://on.fb.me/1WeQwfD
http://bit.ly/1V4yMTL