

Learning Area: Biodiversity		
Success Criteria:		
Introduction	Activity	Summary
<p>Introduce the activity as a Technology Challenge.</p> <p>Scientific equipment is designed for specific tasks. We are looking at the types of equipment scientists use to collect specimens from certain areas.</p> <p>Share and discuss various successful equipment – Pooter, Tullgren funnel, Baermann funnel, net, pitfall trap, beating tray – show examples (use pictures or diagrams if actual article not available.)</p> <p>Our Challenge is to design a piece of equipment for collecting invertebrates from this area.</p>	<p><u>Design/Planning</u></p> <p>Identify a location that invertebrates are to be collected from – a stream, leaf litter, bush, soil – visit the area with students.</p> <p>Students list features of area, considerations needed for collecting specimens – access, visibility, if specimens are alive how do we ensure they stay alive after we have collected them etc.</p> <p>We want to collect invertebrates so we can analyse the health of the area, what specimens live there, size and number of specimens, what does the presence and condition of these specimens tell us about our area?</p>	<p>Time to test the designs.</p> <p>Students visit the designated area and use their equipment to make the necessary collections.</p> <p>Students evaluate their design -</p> <p>How easy is our equipment to use?</p> <p>How successful is our equipment at collecting the necessary specimens?</p> <p>Have we been able to collect enough specimens to make an accurate analysis?</p> <p>What changes would make the design better?</p> <p>Using data of the collected specimens Students write up an analysis of the area –</p>

Questions to consider during Design Process?

What type of organisms are expected?

What size of organisms are expected?

What is the known behaviour of the organisms? – do they move away from light and heat? – do they move towards water?

What changes are expected over time? – are certain organisms at the location all the time? – at certain times of the day? – at certain times of the year?

Are we trying to catch the creatures alive or dead?

How will we know we have a representative sample of what is present in the chosen location?

Sketch design ideas – finalise plans for construction.

Make a list of all materials needed in the construction of your final design.

Construction

Use materials and tools identified in your design to construct your collection equipment.

Note any changes you make to your design as you go – make these notes in a different colour on your design sheet.

What specimens they collected?

How big/small were the collected specimens?

How many of the specimens were present?

What does the presence of these specimens tell about the health of the area?

Students present their final report on the area – this presentation could be a 3-sided display, powerpoint, poster, leaflet etc.