

# Knowledge of stone tools

First Nations people chose natural and environmental resources from the land. They would use their knowledge of stones and rocks in tool making, hunting, food preparation, trade and story sharing. Stones and rocks were modified using a process of design and technology. Stones were sharpened for use as cutting tools or stone axes. Flat rocks and grinding stones were used like a motor and pestle.

Knowledges about stone tools can be useful today. In partnership with First Nations people, students can make story and symbol stones through re-creating traditional rock carving and rock painting, or make traditional tools for grinding and measuring seed or flour.



Indigenous Knowledges	Connecting Indigenous Knowledges and Mathematics	Connections to the Australian Curriculum
<p>Jason Smith (Palawa man from Lutruwita) shares his knowledge of the natural resources on Palawa Country, such as rocks and stones used as tools for crushing, grinding and cutting.</p> <p>Matt Burns (Quandamooka Traditional Custodian from North Stradbroke Island) shares his knowledge of stone tools. He describes the features of stone that are used for different purposes.</p>	<p><b>Share Indigenous Knowledge of knowledge of stone tools</b> Students:</p> <ul style="list-style-type: none"> <li>draw tools made with stones collected on Country</li> <li>describe, compare and classify stone tools by key features (like shape and mass) and explain what makes them useful for crushing, grinding or cutting</li> <li>compare, measure and order rocks suitable for grinding and crushing by mass</li> <li>reflect on their classification of stone tools.</li> </ul>	<p>In Year 1, students:</p> <ul style="list-style-type: none"> <li>compare directly and indirectly</li> <li>order objects and events using attributes of length, mass, capacity and duration</li> <li>communicate reasoning (AC9M1M01).</li> </ul> <p>In Year 2, students measure and compare objects based on length, capacity and mass using uniform informal units and smaller units for accuracy when needed (AC9M2M01).</p>
<p>Matt Burns (Quandamooka Traditional Custodian from North Stradbroke Island) shares his knowledge of stone tools describing the ways rocks were shaped into sharp edges as cutting tools.</p>	<p><b>Share Indigenous Knowledge of stone tools used for cutting</b> Students:</p> <ul style="list-style-type: none"> <li>draw the methods used to shape rocks into sharp edges</li> <li>observe and compare rocks shaped into cutting tools</li> <li>describe the edge angles of stone axe heads and other stone tools used to cut</li> <li>order stone tools according to the edge angle</li> <li>reflect on their order of stone tools and give reasons.</li> </ul>	<p>In Year 3, students identify angles as measures of turn and compare angles with right angles in everyday situations (AC9M3M05).</p> <p>In Year 4, students estimate and compare angles using angle names including acute, obtuse, straight angle, reflex and revolution, and recognise their relationship to a right angle (AC9M4M04).</p>
<p>Matt Burns (Quandamooka Traditional Custodian from North Stradbroke Island) shares his knowledge of stone tools and their use in grinding seeds. He also shares knowledge of the need for trading to get grinding rocks not commonly found on Quandamooka country.</p>	<p><b>Share Indigenous Knowledge of stone tools used for grinding</b> Students:</p> <ul style="list-style-type: none"> <li>draw the different stones Matt showed for grinding seeds</li> <li>experiment with grinding seed using a grinding stone and flat rock or with a coffee grinder or mortar and pestle</li> <li>use formal units to measure seed mass then compare to the mass of the ground flour and describe how long the process took</li> <li>describe the quantity of seed needed to grind flour for different recipes of traditional foods</li> <li>reflect on the process and describe what they found out in terms of mass and duration.</li> </ul>	<p>In Year 4, students interpret unmarked and partial units when measuring and comparing attributes of length, mass, capacity, duration and temperature, using scaled and digital instruments and appropriate units (AC9M4M01).</p>
<p>Bart Pigram (Yawuru man from Broome) shares his knowledge of using stone tools to remove oysters from their rocky surrounds. Bart demonstrates the angle required to remove the oyster from the rock.</p>	<p><b>Share Indigenous Knowledge of stone tools</b> Students:</p> <ul style="list-style-type: none"> <li>draw the tools and process shown by Bart to remove oysters from a rock</li> <li>investigate striking objects at different angles</li> <li>estimate then measure the angle</li> <li>use angle names and relate angles to more than, less than or equal to 90°</li> <li>record and show their investigations</li> <li>reflect on the use of angles in traditional stone tools.</li> </ul>	<p>In Year 5, students estimate, construct and measure angles in degrees, using appropriate tools (including a protractor) and relate these measures to angle names (AC9M5M04).</p>
<p>Jason Smith (Palawa man from Lutruwita) shares his knowledge of the natural resources on Palawa Country, such as rocks and stones used as tools for crushing, grinding and cutting.</p> <p>Jason describes grinding stones used to crush ochre into a powder. Ochre is in traditional body painting for ceremonial purposes. A wide range of colours are possible.</p>	<p><b>Share Indigenous Knowledge of stone tools used for grinding and crushing</b> Students investigate ratio through creating a colour pallet based on a combination of 2-colour acrylic paints (commonly used in school art rooms) expressed as a ratio.</p> <p>An example is creating orange. Students could find the combination that provides the darkest orange.</p> <p>Students:</p> <ul style="list-style-type: none"> <li>mix 3 parts red to 7 parts yellow (3:7) or 1 part red to 5 parts yellow (1:4)</li> <li>communicate their ideas</li> <li>share their colour pallets with the ratios shown</li> <li>reflect on the process and comment on how ratio can be used make different tints of colour.</li> </ul>	<p>In Year 7, students use mathematical modelling to:</p> <ul style="list-style-type: none"> <li>solve practical problems involving ratios</li> <li>formulate problems</li> <li>interpret and communicate solutions, justifying choices made about the representation (AC9M7M06)</li> </ul> <p>In Year 8, students use mathematical modelling to:</p> <ul style="list-style-type: none"> <li>solve practical problems (including financial) involving ratios and rates</li> <li>formulate problems</li> <li>interpret and communicate solutions, reviewing the appropriateness of the model. (AC9M8M07)</li> </ul>