



# *Spear throwing 1:* *prior knowledge and cultural considerations – Aboriginal Elder visit*



First lesson in a series of six lessons titled **Spear throwing**, planned to allow students to make connections with their cultural understanding of spear throwing, linking it to mathematics learning

- **Spear throwing 1: prior knowledge and cultural considerations – Aboriginal Elder visit**
- Spear throwing 2: measuring using non-standard units
- Spear throwing 3: measuring and comparing using uniform units
- Spear throwing 4: measuring and comparing using standard units
- Spear throwing 5: graphing results
- Spear throwing 6: understanding

## CURRICULUM INFORMATION

### PHASE OF DEVELOPMENT

Early Childhood	Middle Childhood	Early Adolescence	Late Adolescence
✓	✓ ✓	✓	✓

### MAJOR LEARNING AREAS

The Arts	English	H & PE	LOTE	Mathematics	Science	S & E	T & E
	✓	✓		✓ ✓	✓	✓	✓

### VALUES

Pursuit of knowledge & commitment to achievement of potential	Self acceptance & respect of self	Respect & concern for others & their rights	Social & civic responsibility	Environmental responsibility
✓	✓	✓	✓	

## TOPIC INFORMATION

### PURPOSE

- To provide an opportunity for students to integrate their culture into their mathematical learning.
- To make students aware that maths concepts are a part of everyday Aboriginal activities, both past and present.
- To have students investigate ways to measure the distance a spear will travel when thrown.

### STUDENT OUTCOMES FROM THIS LESSON

- Students use non-standard units to measure the distance travelled by a spear.
- Students choose appropriate items to use as units of measurement ensuring the unit relates to what is being measured.
- Students find a 'true' measurement by ensuring there are no gaps and overlaps.
- Students use uniform units and measure accurately to compare lengths.





## KEY BACKGROUND POINTS

The concept of length is one which teachers often assume children understand, particularly when they use words such as 'kilometres' or 'ks' in appropriate ways in their conversation. Many children from Western cultures are immersed in this language even prior to formal schooling.

Aboriginal cultures are less concerned with quantity and accuracy so Aboriginal children are unlikely to bring similar understandings to a classroom situation. In these cultures, measures of distance are often referred to in general terms, such as 'not far' or 'a little way' rather than in specific distances.

In some Aboriginal cultural groups, direction is more important than distance. For example, an Aboriginal person might point in a particular direction and say 'close up' (meaning not far that way) or 'long way'. The time it takes to say the word 'long' may indicate the distance.

Similarly, length is frequently more about individual or personal length, rather than a measurement in generic units. When making a spear for example, the length of the arm of the person using the spear may be used as a reference – an appropriate unit for this purpose.

All children should be presented with this view of measurement.

(From Thelma Perso, *Improving Aboriginal Numeracy*).

## CULTURAL & PROTOCOL CONSIDERATIONS

- In our school, East Kalgoorlie Primary School, girls were not to participate in this activity as in their culture they were not allowed to throw spears. Men used spears for hunting and this is not part of the women's role. Check with your local community to see rules for girls' participation.
- If you live on the coast, girls may be able to participate using fishing lines instead of spears. If spears are not available, boomerangs may be substituted.

## RESOURCES

Medium	Author, producer, developer etc	Title	Source
book	Thelma Perso	<i>Improving Aboriginal Numeracy</i>	MASTEC (Aust.) 2003, Available from the Mathematical Association of Western Australia

## TEACHING AND LEARNING STRATEGIES

### TEACHING RESOURCES

#### Painting on paper

- digital camera to capture the experience
- spears, woomeras (available from Aboriginal community or students can bring spears from home)
- oval – or similar space, marked clearly to show the place to throw spears from, each time.
- an Aboriginal Elder from the community – AIEO to assist in organisation





## LESSON STEPS

Adapt this lesson to suit the needs/levels of your students.

### Preparation

- **Consult** Aboriginal experts, AIEOs and others from school and community to find correct protocols for spear throwing, and to identify who could come to demonstrate and explain these to your class.
- **Consult** AIEOs and seek their assistance in organizing an appropriate Aboriginal person/Elder to come to school and demonstrate spear throwing skills.
- **Invite** Elder to talk to your class and discuss what you'd like them to do. In this case you want them to share their knowledge about: throwing a spear; using a woomera; discussing how far a spear must be thrown; and Aboriginal languages associated with spears and hunting. Depending on how the Elder shares cultural knowledge with students, be aware it may look different from your expectations. Ask if the Elder is happy for students to ask questions at the end of the session.
- **Book** AIEO support time and arrange for community helpers (as appropriate) so that you have one adult per group for the spear throwing activity.
- **Organise** someone – it may be students – to photograph activities and students as they participate.
- **Prepare** students for the visit. Make clear your expectations about demonstrating respect to the Elder, for both Aboriginal and non Aboriginal students.
- **Prepare** a greeting for the Aboriginal Elder, on arrival for the visit to the class.
- **Thank** the visitor for sharing their culture with students, or ask a student to prepare beforehand to do this on behalf of the class.
- **Prepare** a KWL outline for developing a class chart (see below, with entries after class discussion).
- **Prepare** list of focus questions for group discussing ways to measure distance thrown Implementation

What I already know about spears	What I want to learn about spears	What I learnt about spears
<p>Aboriginal people used them for hunting.</p> <p>Girls can't throw them.</p> <p>Spears were made from special trees called _____.</p> <p>* A woomera makes a spear go further.</p>	<p>Do Aboriginal people still hunt with spears?</p> <p>How do you make a spear?</p> <p>* Who will throw the greatest distance?</p> <p>Who teaches you how to make spears?</p> <p>What is a spear called in Aboriginal language?</p>	<p>A spear is called _____.</p> <p>It is made from _____ trees.</p> <p>Men teach boys how to make spears.</p> <p>* Spears are made for each boy based on his arm length.</p> <p><i>(Entries may be added to this part at the end of each lesson.)</i></p>
<p>* These points relate to mathematical understandings.</p>		





## Implementation

### Whole class

Before the Aboriginal Elder arrives:

- **Discuss** what students know about spear throwing and what they'd like to know. These points may be questions for students to ask the visiting Elder at the end of the lesson, if they still need to.
- **Enter** points raised on KWL chart.
- **Teach** students how to show respect to Aboriginal Elders: listen when they are talking; watch when demonstrating; and repeat language when requested. This often means, I say it then you say it.
- **Discuss** safety rules of spear throwing. Ensure everyone understands safety issues involved. For example, do not run out to collect a spear until everyone has completed their throw; no throwing spears at each other; only throw when instructed to do so from the point marked for this purpose ...
- **Move** students outside onto the oval area to greet the Elder.

When the Aboriginal Elder arrives:

- **Greet** Elder – you may have arranged for a student to prepare to do this.
- Aboriginal Elder **teaches** students about spear throwing using cultural protocols.
- Aboriginal Elder **demonstrates** how to throw a spear both with and without a woomera.

### Working in small groups

**Divide** class into groups – 8 is ideal for this activity.

Groups will rotate through each of the following tasks:

- **Practising** the art of throwing a spear under Elder's guidance,
- **Observing and discussing** techniques being used by group with Elder; and
- **Responding** to prepared focus questions like:
  - How could we measure the distance the spear travelled?
  - What should we use to measure how far it went, keeping in mind, we have no measuring equipment?
  - What would be appropriate? Now? If we could get some equipment?
  - Could we use different ways of measuring different throws? Why? Why not?

### Whole class

When each group has completed the above activities:

- **Discuss** students' queries with Elder (prior to lesson ensure Elder is happy to do this).
- **Thank Elder** for their visit (as prepared).

Return to class

- **Include** additional learning on the KWL chart.

## ASSESSMENT

Teacher observation. Focus questions may include aspects like:

- Did students demonstrate respect for Aboriginal culture and the Aboriginal Elder, and value the learning experience?
- How well did each student participate in each activity: spear throwing; observation; measurement discussion?
- Did student implement the advice provided by the Elder?

### Acknowledgements / Thanks to contributors.

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