**Yuendumu leaf game: introduction**

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| Year level  Strand(s)  Lesson length  CD Code | * Foundation * Number * 45 mins * [AC9MFN02](https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/foundation-year/content-description?subject-identifier=MATMATFY&content-description-code=AC9MFN02&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick) * [AC9MFN05](https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/foundation-year/content-description?subject-identifier=MATMATFY&content-description-code=AC9MFN05&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick) |
| Lesson summary | In this first of three lessons, students investigate the concept of Yuendumu leaf games and stories and become familiar with how they can be used for addition, subtraction, quantification, counting and subitising.  This lesson was developed in collaboration with Caty Morris and Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA).  The original concept of the Yuendumu leaf game was developed by Kumanjayi Nangala. Permission has kindly been granted for use in this resource. |
| Learning intention | * We are exploring stories that involve addition and subtraction. |
| Success criteria | By the end of this lesson, students can:   * use objects to represent, role-play or tell stories that involve ‘adding’ or ‘taking away’ * use the language of ‘more’ and ‘less’ in their stories * notice and describe patterns. |
| Why are we learning about this? | Students have the opportunity to engage in a real-life mathematics experience that’s on-Country/Place and connects with a First Nations’ culture, that is, connects mathematics with culture. |
| Prerequisite student knowledge and language | Prior to this lesson, it is assumed that students:   * know how to count small collections (of at least 5), applying the principles of counting * understand that it is the last number said that gives the count of a collection * know how to solve simple number story problems, which require students to add, take away or combine two amounts by imagining or role-playing the situation and counting the resulting quantity. |
| **Resources** | * Lesson plan (Word) * Teacher’s slides (PowerPoint) * At least 5 gum tree leaves (or similar) of different sizes |

Curriculum information

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| Achievement standard | By the end of Foundation, students use subitising and counting strategies to quantify collections. Students represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10. |
| Content description(s) | Students recognise and name the number of objects within a collection up to 5 using subitising.[[AC9MFN02](link:%20https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/year-6/content-description?subject-identifier=MATMATY6&content-description-code=AC9M6N02&load-extra-subject=MATMATY6&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&achievement-standard=11833d02-a46b-48cf-89c2-794928028aa4&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)](https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/foundation-year/content-description?subject-identifier=MATMATFY&content-description-code=AC9MFN02&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)  Students represent practical situations involving addition, subtraction and quantification with physical and virtual materials and use counting or subitising strategies. [AC9MFN05](https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/foundation-year/content-description?subject-identifier=MATMATFY&content-description-code=AC9MFN05&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick) |
| General capabilities  Cross-curriculum priority | General capabilities  Numeracy   * Number and place value [Level 2](https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/mathematics/foundation-year/general-capability-snapshot?subject-identifier=MATMATFY&content-description-code=AC9MFN02&general-capability-code=N&element-code=NN&sub-element-index=0&sub-element-code=NNNPV&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick)   Critical and Creative Thinking | Inquiring   * Identify, process and evaluate information [Level 2](https://v9.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/critical-and-creative-thinking/slideout?code=CCTINQA2&element=0&sub-element=0)   Cross-curriculum priority  Aboriginal and Torres Strait Islander Histories and Cultures   * First Nations Australians’ ways of life reflect unique ways of being, knowing, thinking and doing. [A\_TSIC2](https://v9.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/aboriginal-and-torres-strait-islander-histories-and-cultures/slideout?code=A_TSIC2&organising-idea=0) |
| Areas of challenge | Some students may:   * not yet be using one-to-one correspondence (for example, they are not yet coordinating the number names with pointing to or moving objects one by one). Use this lesson to highlight and practise counting accurately by ones. * be using one-to-one correspondence accurately to count a small collection but may not yet be conserving number to ‘trust the count’ (for example, understand that counting the same collection a second time will yield the same answer each time). |
| Strategies | * Culturally responsive pedagogies * Concrete, Representational, Abstract (CRA model) * Differentiated teaching |

Lesson structure

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| Learning hook  5 mins | * **Download and use the teacher’s slides to accompany your teaching.** * **Show the Yuendumu leaf games (slide 2) from the Warlpiri People of the Northern Territory and give students time to think about what they notice and what they wonder.** * **Explain that the different-sized/shaped leaves represent the different members of the family, for example, the larger leaves are the parents, and the smaller leaves are children of different ages. The smallest leaf represents the youngest the family member.** |
| Explore  35 mins | * Sit in a circle (outside on Country/Place or in the classroom) and use different strategies such as holding a set of 5 leaves in front of you, saying how many, and then putting two behind you and asking students ‘how many, now?’ * Show students further examples of simple addition and subtraction using the leaf family members, for example, parent/s together, 1 child comes and joins them and then 2 more children. How many people do we start with, how many join in (1) and then how many more (2) = 5 altogether. Students could also use subitising to quantify a collection. * Take students for a walk on Country/Place, for example, the school grounds, to pick their own set of (gum) leaves to make up their leaf family. Allow them to choose a number of leaves up to 10, to collect to make up their family. * Sitting in a circle again, provide several examples for students to join in with and follow along, for instance, having 4 leaves and then taking away 2, telling an appropriate accompanying story.   Differentiation   * Support prompts: How many leaves are there? * Enabling prompts: What could the 5 leaves represent? Can you think of a story about them? * Extending prompt: How can we use the leaves to tell a story? |
| Summary and reflection  5 mins | * Ask students to discuss how we use the leaves to tell a story. * Provide opportunities for students to share stories. |
| Assessment | * Use observation and informal conversations to assess students’ proficiency in using counting strategies to quantify collections. |