



Six Beads

Stage	Strand	Strand Unit
2	Number	Place Value

Learning Outcomes	Maths Concepts
Through appropriately engaging learning experiences, children should be able to understand that digits have different values depending on their place or position in a number.	The value of a digit in a number depends on its place. The position of a digit denotes a value ten times that of the digit to its right.

Learning Maths

This learning experience encourages learners to explore and experiment with numbers and place value. To begin, the class explores and discusses the numbers they can build using three beads and an abacus. Learners then progress to experiment with six beads, using a variety of materials, to create two digit numbers, e.g. 24, 51, 42 etc.

Understanding and Connecting	Communicating	Reasoning	Applying and Problem Solving
<i>The learner</i>			
Appreciates that digits of a numeral to the left have the greater value and digits to the right have the lesser value.	Models and represents two digit numbers in terms of tens and ones using a variety of models and materials.	Orders the 2 digit numbers formed in ascending or descending order.	Compares ideas, strategies and approaches to placing the beads when building a number and discusses the merits of each.



Teaching Maths	
Fostering Productive Disposition	Encouraging Playfulness with Mathematics
Engage learners in meaningful self-assessment and reflection once the two digit numbers have been created.	Provide access to a wide range of resources, visual supports and technologies to find all possible solutions. Resources could include but are not limited to beads, cubes, whiteboards, arrow cards, abacus, digit cards, number fans.
	Emphasising Mathematical Modeling
	Facilitate learners to build, test and apply mathematical models using multiple modes of representation and expression.
Using Cognitively Challenging Tasks	Promoting Maths Talk
Modify the learning experience to appropriately stretch and deepen learners' understanding by increasing the number of beads and challenging learners to use hundreds, tens and units columns.	Using strategic, skilful questioning, prompt learners to share their strategies and solutions. Sample questions might include; • What can you tell me about the numbers you've found? • Are there any other ways you can arrange those beads? • How can you tell if you have found all combinations?
Assessing Maths	
• Has the learner identified all two digit number combinations possible with six beads? • Does the learner recognise zero as a placeholder? • Does the learner recognise that the value of a digit in a number depends on its place? • Does the learner understand that the value of a digit depends on its place within a number?	
Source	
Adapted from https://nrich.maths.org/152	