



**Zula Exploration Mission Modules
Alignment Overview To
Mathematics PK-2 Curriculum Focal Points**

Module Key

Physical Science	Life Science	Earth Science
<ol style="list-style-type: none">1. Simple machines2. Force3. Mixtures, Solutions, and Chemical Reactions4. Matter5. Light6. Invisible Forces	<ol style="list-style-type: none">7. Habitats: Oceans, Rainforests, and Canyons8. Plants, Animals, and Life Cycles9. Animal Adaptations10. Animals and Energy11. Garden Habitats	<ol style="list-style-type: none">12. Water13. Earth's Water Cycle14. Evaporation and Condensation15. Earth's Changing Environment16. Weather17. Wind and Erosion18. Rocks and Soil19. Landforms: Mountains and Volcanoes20. Objects in the Sky: Sun and Moon

STANDARD	RELATIONSHIP	Zula's Exploration Mission Modules™
Pre-kindergarten		
<p>Number and Operations</p> <p>Developing an understanding of whole numbers, including concepts of correspondence, counting, cardinality, and comparison</p>	<p>The number of objects in small groups without counting and by counting—the first and most basic mathematical algorithm. They understand that number words refer to quantity. They use one-to-one correspondence to solve problems by matching sets and comparing number amounts and in counting objects to 10 and beyond. They understand that the last word that they state in counting tells “how many,” they count to determine number amounts and compare quantities (using language such as “more than” and “less than”), and they order sets by the number of objects in them.</p>	<p>Level 1 / 1,3,4,8,9,13</p> <p>Level 2 / NA</p>
<p>Geometry</p> <p>Identifying shapes and describing spatial relationships</p>	<p>Examine the shapes of objects and inspect their relative positions. They find shapes in their environments and describe them in their own words. They build pictures and designs by combining two- and three-dimensional shapes, and they solve such problems as deciding which piece will fit into a space in a puzzle. They discuss the relative positions of objects with vocabulary such as “above,” “below,” and “next to.”</p>	<p>Level 1 / 1,2,4,5,8,13</p> <p>Level 2 / NA</p>
<p>Measurement:</p> <p>Identifying measurable attributes and comparing objects by using these attributes</p>	<p>Children identify objects as “the same” or “different,” and then “more” or “less,” on the basis of attributes that they can measure. They identify measurable attributes such as length and weight and solve problems by making direct comparisons of objects on the basis of those attributes.</p>	<p>Level 1 / 1,2,3,4,5,8,9,13</p> <p>Level 2 / NA</p>
<p>Connections To The Pre Kindergarten Focal Points</p> <p>Number and Operations</p>	<p>Children use meanings of numbers to create strategies for solving problems and responding to practical situations, such as getting just enough napkins for a group, or mathematical situations, such as determining that any shape is a triangle if it has exactly three straight sides and is closed.</p>	<p>Level 1 /</p> <p>Level 2 / NA</p>

<p style="text-align: center;">Connections To The Pre Kindergarten Focal Points</p> <p style="text-align: center;">Algebra</p>	<p>Children recognize and duplicate simple sequential patterns (e.g., square, circle, square, circle, square, circle,...).</p>	<p>Level 1 / 1,2</p> <p>Level 2 / NA</p>
<p>Kindergarten</p>		
<p style="text-align: center;">Number and Operation</p> <p style="text-align: center;">Representing, comparing, and ordering whole numbers and joining and separating sets</p>	<p>Quantitative problems, such as counting objects in a set, creating a set with a given number of objects, comparing and ordering sets or numerals by using both cardinal and ordinal meanings, and modeling simple joining and separating situations with objects. They choose, combine, and apply effective strategies for answering quantitative equations, including quickly recognizing the number in a small set, counting and producing sets of given sizes, counting the number in combined sets, and counting backward.</p>	<p>Level 1 / 1,3,8,9,13</p> <p>Level 2 / 1,3,9,13</p>
<p style="text-align: center;">Connections To The Kindergarten Focal Points</p> <p style="text-align: center;">Data Analysis</p>	<p>Children sort objects and use one or more attributes to solve problems. For example, they might sort solids that roll easily from those that do not. Or they might collect data and use counting to answer such questions as, "What is our favorite snack?" They re-sort objects by using new attributes (e.g., after sorting solids according to which ones roll, they might re-sort the solids according to which ones stack easily).</p>	<p>Level 1 / 1,3,5,8,9,13</p> <p>Level 2 / 1,4,8,13</p>
<p style="text-align: center;">Connections To The Kindergarten Focal Points</p> <p style="text-align: center;">Geometry</p>	<p>Children integrate their understandings of geometry, measurement, and number. For example, they understand, discuss, and create simple navigational directions (e.g., "Walk forward 10 steps, turn right, and walk forward 5 steps").</p>	<p>Level 1 / NA</p> <p>Level 2 / 1,2,3,4,5,8,13</p>
<p style="text-align: center;">Connections To The Kindergarten Focal Points</p> <p style="text-align: center;">Algebra</p>	<p>Children identify, duplicate, and extend simple number patterns and sequential and growing patterns (e.g., patterns made with shapes) as preparation for creating rules that describe relationships.</p>	<p>Level 1 / 1,2</p> <p>Level 2 / 1,2,5,9</p>
<p>Number and Operations and</p>	<p>Children develop strategies for adding and subtracting whole numbers</p>	<p>Level 1 / NA</p>

<p style="text-align: center;"><i>Algebra</i></p> <p style="text-align: center;">Developing understandings of addition and subtraction and strategies for basic addition facts and related subtraction facts</p>	<p>on the basis of their earlier work with small numbers. They use a variety of models, including discrete objects, length-based models (e.g., lengths of connecting cubes), and number lines, to model “part-whole,” “adding to,” “taking away from,” and “comparing” situations to develop an understanding of the meanings of addition and subtraction and strategies to solve such arithmetic problems. Children understand the connections between counting and the operations of addition and subtraction (e.g., adding two is the same as “counting on” two). They use properties of addition (commutativity and associativity) to add whole numbers, and they create and use increasingly sophisticated strategies based on these properties (e.g., “making tens”) to solve addition and subtraction problems involving basic facts. By comparing a variety of solution strategies, children relate addition and subtraction as inverse operations.</p>	<p>Level 2 / 1,3,4,5,9,13,</p>
<p style="text-align: center;">Geometry</p> <p style="text-align: center;">Composing and decomposing geometric shapes</p>	<p>Children compose and decompose plane and solid figures (e.g., by putting two congruent isosceles triangles together to make a rhombus), thus building an understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine figures, they recognize them from different perspectives and orientations, describe their geometric attributes and properties, and determine how they are alike and different, in the process developing a background for measurement and initial understandings of such properties as congruence and symmetry.</p>	<p>Level 1 / NA</p> <p>Level 2 / 1,2,4,5,13</p>
<p style="text-align: center;">Connections To The Grade 1 Focal Points</p> <p style="text-align: center;"><i>Number and Operations and Algebra</i></p>	<p>Children use mathematical reasoning, including ideas such as commutativity and associativity and beginning ideas of tens and ones, to solve two-digit addition and subtraction problems with strategies that they understand and can explain. They solve both routine and nonroutine problems.</p>	<p>Level 1 / NA</p> <p>Level 2 / 8</p>

<p>Connections To The Grade 1 Focal Points</p> <p>Algebra</p>	<p>Through identifying, describing, and applying number patterns and properties in developing strategies for basic facts, children learn about other properties of numbers and operations, such as odd and even (e.g., “Even numbers of objects can be paired, with none left over”), and 0 as the identity element for addition.</p>	<p>Level 1 / NA</p> <p>Level 2 / 1,4,5,9</p>
<p>Second Grade</p>		
<p>Number and Operations</p> <p>Developing an understanding of the base-ten numeration system and place-value concepts</p>	<p>Concepts (at least to 1000). Their understanding of base-ten numeration includes ideas of counting in units and multiples of hundreds, tens, and ones, as well as a grasp of number relationships, which they demonstrate in a variety of ways, including comparing and ordering numbers. They understand multidigit numbers in terms of place value, recognizing that place-value notation is a short hand for the sums of multiples of powers of 10 (e.g., 853 as 8 hundreds + 5 tens + 3 ones).</p>	<p>Level 1 / NA</p> <p>Level 2 / 8,13</p>
<p>Measurement</p> <p>Developing an understanding of linear measurement and facility in measuring lengths</p>	<p>Children develop an understanding of the meaning and processes of measurement, including such underlying concepts as partitioning (the mental activity of slicing the length of an object into equal-sized units) and transitivity (e.g., if object A is longer than object B and object B is longer than object C, then object A is longer than object C). They understand linear measure as an iteration of units and use rulers and other measurement tools with that understanding. They understand the need for equal-length units, the use of standard units of measure (centimeter and inch), and the inverse relationship between the size of a unit and the number of units used in a particular measurement (i.e., children recognize that the smaller the unit, the more iterations they need to cover a given length).</p>	<p>Level 1 / NA</p> <p>Level 2 / 1,2,3,4,</p>
<p>Connections To The Grade 2 Focal Points</p> <p>Algebra</p>	<p>Children use number patterns to extend their knowledge of properties of numbers and operations. For example, when skip counting, they build foundations for understanding multiples and factors.</p>	<p>Level 1 / NA</p> <p>Level 2 / 5,9,13</p>