

Jefferson City Public Schools–Curriculum

SUBJECT: Elementary

COURSE: EER

STRAND: Problem Solving: Just for the Fun of It!

Objectives	Assessment/Evaluation	Instructional Activities
<p>(A) Amazing Arithmetic Arrays – Patterns Search mathematical arrays for content and patterns and create their own arrays to see if the pattern holds true</p> <p>Performance: 1.6, 4.1 Knowledge: (MA) 4 MAGLE: AR.1.A (Gr. 5) NETS: (3-5) 8 DOK: 3</p>	<ul style="list-style-type: none"> • In-class self-evaluation • Teacher will evaluate conclusions drawn from 3x3 arrays using a scoring guide 	<ul style="list-style-type: none"> • Study array and list at least 10 patterns • Share findings • Compare and contrast patterns in 3 arrays • Share findings • Fill in blank arrays • Explore patterns • Draw numerical conclusions
<p>(B) Zip, Zap, Zop - Logic Use logical reasoning and strategy to guess the numbers chosen by their partners in the fewest tries possible</p> <p>Performance: 1.6, 3.6 Knowledge: (MA) 4 MAGLE: AR.1.A (Gr. 5) NETS: (3-5) 8 DOK: 3</p>	<p>In-class self-evaluation</p>	<ul style="list-style-type: none"> • Play zip, zap, zop as a class • Students play in pairs, recording clues and guesses • Extend the game by allowing 3 and 4 digit numbers • Students will show strategies to the class

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<p>(C) The Square Challenge – Problem Solving</p> <ul style="list-style-type: none"> • Use problem solving challenges to find the number of squares of all sizes in a 6x6 grid • Use information to determine how many squares are on an 8x8 checkerboard <p>Performance: 1.6, 4.6 Knowledge: (MA) 4 MAGLE: AR.1.A (Gr. 5) NETS: N/A DOK: 3</p>	<p>Teacher will evaluate paragraphs using a scoring guide</p>	<p>Students will:</p> <ul style="list-style-type: none"> • count all sizes of squares in 6x6 grid in small groups • use complete sentences to explain their findings • use manipulatives to check their findings • determine patterns in 6x6 grid • apply patterns to 8x8 grid • explain in a paragraph
<p>(D) Lines, Triangles and Squares - Geometry</p> <ul style="list-style-type: none"> • Find all regions a square can be divided into with any number of straight lines • Discover geometric principles • Find algebraic explanations for the work <p>Performance: 1.6, 3.6 Knowledge: (MA) 4 MAGLE: GSR.1.C (Gr. 5) NETS: N/A DOK: 3</p>	<p>Teacher will evaluate paragraphs using a scoring guide</p>	<ul style="list-style-type: none"> • Divide squares into regions using 3 straight lines, 4 straight lines, 5 straight lines and use toothpicks as manipulatives • Record findings in a chart • Write an explanation of findings in a paragraph
<p>(E) Set Counting – Counting Sets</p> <ul style="list-style-type: none"> • Find all possible ways to put objects into 2 and 3 sets • Discover benefits of a systematic approach to problem solving as opposed to trial and error <p>Performance: 3.6 Knowledge: (MA) 1 MAGLE: AR.3.A (Gr. 6) NETS: N/A DOK: 4</p>	<ul style="list-style-type: none"> • In-class self-evaluation • Teacher will evaluate paragraphs using a scoring guide 	<p>Students will:</p> <ul style="list-style-type: none"> • place 14 objects into 2 sets as many ways as possible • plan an organized approach to creating sets • test their approach by putting objects into 3 sets • share approach with class • write a paragraph explaining the benefit of their approach

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<p>(F) Tinkering with Twos – Problem Solving</p> <ul style="list-style-type: none"> Combine twos with various mathematical operations to make number sentences resulting in the numbers 2-10 Discover order of operations <p>Performance: 3.6 Knowledge: (MA) 1 MAGLE: NO.1.C; M.2.C (All Gr. 6) NETS: (3-5) 8 DOK: 4</p>	<p>Peer-evaluation of extensions</p>	<ul style="list-style-type: none"> Teacher introduces order of operations Combine 5 twos with one or more arithmetic symbols so the resulting answer is 1-10 Write complete sentences describing the process used Create an extension problem, trade papers and solve each other's extensions