



Grade 4 Math Enrichment - Unit 1 - Logic and Perplexors

Unit Focus

Students learn to use Venn diagrams and logic to organize and analyze data. Using deductive reasoning, students learn how to effectively use these organizational tools to draw conclusions. Students are then challenged to create their own engaging Venn perplexors and logic puzzles to share with their peers.

Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
Common Core Mathematics: 4 - Make sense of problems and persevere in solving them. (CCSS.MATH.MP.1) - Construct viable arguments and critique the reasoning of others. (CCSS.MATH.MP.3) - Look for and make use of structure. (CCSS.MATH.MP.7) Madison Public Schools Profile of a Graduate - Analyzing: Examining information/data/ evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences. (POG.1.2) - Product Creation: Effectively use a medium to communicate important information. (POG.3.2)	<i>Students will be able to independently use their learning to...</i> T1 Initiate a plan using a variety of methods/strategies appropriately, execute it, and evaluate the reasonableness and accuracy of the solution. T2 Construct viable arguments using clear and appropriate mathematical language and critique the reasoning of others. T3 Identify and generalize patterns and structure in numbers, expressions, data and objects.	
	Meaning	
	Understanding(s)	Essential Question(s)
	<i>Students will understand that...</i> U1 Effective problem solvers work to make sense of the problem before trying to solve it. U2 Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions. U3 Mathematicians examine relationships to discern a pattern, generalizations, or structure. U4 Mathematicians can describe patterns, relations, and/or functions to access strategies to solve problems.	<i>Students will keep considering...</i> Q1 How does a problem solver think? Q2 Does this solution make sense? Q3 How can I use what I know to help me find what is missing?
	Acquisition of Knowledge and Skill	
	Knowledge	Skill(s)
	<i>Students will know...</i> K1 organization of a venn diagram K2 the structure of a logic grid K3 Vocabulary: set, intersection, union, attribute, member	<i>Students will be skilled at...</i> S1 sorting and classifying objects according to their attributes S2 organizing, recording and communicating like and unlike attributes with the use of Venn diagrams

Stage 1: Desired Results - Key Understandings

		S3 representing categorical data building on the mathematical concepts of "and" and "or" S4 develop strategies to determine whether data have same, some or no common characteristics S5 using a logic chart to organize and solve problems S6 using deductive reasoning to solve logic problems.
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