

Content Overview

The following table represents some of the key concepts addressed in each episode.

DVD Video Episode	Ohio Mathematics Standard	Benchmark Connection	*Content/Thinking Challenges	Problem-Solving Strategy
Amazing Chase	Measurement	D – Use proportional reasoning and apply indirect measurement techniques, including right triangle trigonometry and properties of similar triangles, to solve problems involving measurement and rates.	<ul style="list-style-type: none"> • Time, yards, miles, feet, meters, direction 	<ul style="list-style-type: none"> • Draw a map
	Mathematical Processes	A – Formulate a problem of a mathematical model in response to a specific need or situation, determine information required to solve the problem, choose a method for obtaining this information, and set limits for acceptable solution.	<ul style="list-style-type: none"> • Specific Situations/ Limited Resources 	<ul style="list-style-type: none"> • Draw a picture
	Geometry & Spatial Sense	E – Draw and construct representations of two and three-dimensional geometric objects using a variety of tools, such as a straightedge, compass and technology.	<ul style="list-style-type: none"> • Profile Map 	<ul style="list-style-type: none"> • Use formulas
Changing Spaces	Measurement	<p>B – Use formulas to find surface area and volume for specified three-dimensional objects accurate to a specified level of precision.</p> <p>E – Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision.</p>	<ul style="list-style-type: none"> • Conversions • Area vs. Volume • Fractional Parts • Surface Area • Percentages and Fractions • Misunderstandings 	<ul style="list-style-type: none"> • Make a table • Draw a picture • Draw a diagram to scale • Make a table • Use logical reasoning

What's the Problem?

DVD Video Episode	Ohio Mathematics Standard	Benchmark Connection	*Content/ Thinking Challenges	Problem-Solving Strategy
Elimidata	Data Analysis & Probability	D – Use counting techniques, such as permutations and combinations, to determine the total number of options and possible outcomes.	<ul style="list-style-type: none"> • Permutations • Combinations 	<ul style="list-style-type: none"> • Guess and Check
	Mathematical Processes	F – Use precise mathematical language and notations to represent problem situations and mathematical ideas.	<ul style="list-style-type: none"> • Prime Numbers • Composite Numbers • Math Vocabulary 	<ul style="list-style-type: none"> • Reading/math language skills
Fear Fraction	Number & Number Sense	I – Estimate, compute and solve problems involving scientific notation, square roots and numbers with integer exponents	<ul style="list-style-type: none"> • n^{th} power & “Squared” • Negative Numbers 	<ul style="list-style-type: none"> • Guess & Check • Make a model
	Measurement	A - Solve increasingly complex non routine measurement problems and check for reasonableness of results.	<ul style="list-style-type: none"> • Celsius vs. Centigrade • Conversion • Fractions 	<ul style="list-style-type: none"> • Make a table • Logical reasoning
	Data Analysis & Probability	J – Compute probabilities of compound events, independent events and simple dependent events.	<ul style="list-style-type: none"> • Predictions 	<ul style="list-style-type: none"> • Guess & check
Simplified Life	Number & Number Sense	<p>A – Use scientific notation to express large numbers and numbers less than one.</p> <p>F – Explain the effects of operations on the magnitude of quantities.</p> <p>I – Estimate, compute and solve problems involving scientific notation, square roots and numbers with integer exponents.</p>	<ul style="list-style-type: none"> • Scientific Notation • Multiplication of Decimals • Square Root • Exponents 	<ul style="list-style-type: none"> • Use objects • Use objects • Guess & check
	Mathematical Processes	F – Use precise mathematical language and notations to represent problem situations and mathematical ideas.	<ul style="list-style-type: none"> • Absolute Value 	<ul style="list-style-type: none"> • Draw a picture

What's the Problem?

DVD Video Episode	Ohio Mathematics Standard	Benchmark Connection	*Content/ Thinking Challenges	Problem-Solving Strategy
Surprise Attack: Business Makeover	Number & Number Sense	<p>G – Estimate, compute and solve problems involving real numbers, including ration, proportion and percent, and explain solutions.</p> <p>I – Estimate, compute and solve problems involving numbers with integer exponents.</p>	<ul style="list-style-type: none"> Percentage Discounts Fractions Multiply by 0 Exponents “Cubed” 	<ul style="list-style-type: none"> Write to explain solutions
	Data Analysis & Probability	<p>C – Compare the characteristics of the mean, median and mode for a given set of data, and explain which measure of center best represents the data.</p> <p>J – Compute probabilities of compound events, independent events and simple dependent events</p>	<ul style="list-style-type: none"> Measures of Central Tendency Predictions 	<ul style="list-style-type: none"> Draw a graph or a diagram Write to explain solutions
Survival	Number & Number Sense	E – Compare, order and determine equivalent forms of real numbers.	<ul style="list-style-type: none"> Equivalent Forms 	<ul style="list-style-type: none"> Choose Operations
	Data Analysis & Probability	J – Compute probabilities of compound events, independent events and simple dependent events	<ul style="list-style-type: none"> Odds/Averages (RBI, ERA, Batting Average) 	<ul style="list-style-type: none"> Make an organized list
The Ohio-bournes	Data Analysis & Probability	H – Use counting techniques, such as permutations and combinations, to determine the total number of options and possible outcomes.	<ul style="list-style-type: none"> Combinations Permutations 	<ul style="list-style-type: none"> Draw a (tree) diagram
	Mathematical Processes	D – Apply reasoning processes and skills to construct logical verifications or counter examples to test conjectures and to justify and defend algorithms and solutions.	<ul style="list-style-type: none"> Multi-step Problems 	<ul style="list-style-type: none"> Write an equation

* The concepts listed in the "Content/Thinking Challenge" column for each episode provide language for communicating mathematical ideas referenced in the video episodes. These concepts also suggest mathematical processes or pedagogical challenges to encourage creative thinking for problem situations, and critical thinking to find the mathematical solution to problems.