

Mathematics

Pre-Calculus

9/18/2009

Data Analysis & Probability	Algebra	Geometry	Measurement	Number and Operations
<p>Definition: Collect, organize and interpret data to predict and draw conclusions.</p>	<p>Definition: Analysis of patterns, relations and functions involving variables.</p>	<p>Definition: Analyze the properties and relationships of shapes.</p>	<p>Definition: Use appropriate tools/units to measure and estimate.</p>	<p>Definition: Understanding and using numbers, systems and relationships.</p>
<p>Questions: Does data always lead to the truth? Is it real winning if the outcome is based on probability? How can patterns forecast the future?</p>	<p>Questions: How do patterns affect your life? What variables do you encounter in everyday life? What if there were no variables? How does algebra help us model/explain our world?</p>	<p>Questions: What is the best shape? Why? Is geometry useful? How would the world look without (insert any shape)? How would the world look if there were only (insert any shape)?</p>	<p>Questions: What things would be impossible without measurement? Why measure? Is there such a thing as exact measurement?</p>	<p>Questions: How would the world be different if we didn't have numbers? How much is enough?</p>
<p>Indicators: 1. Use factorial notation for permutations and combinations in problem solving application. 2. Use technology to compute the standard deviation for a set of data, and interpret standard deviation in relation to the context or problem situation. 3. Describe the standard normal curve and its general properties and answer questions dealing with data assumed to be normal.</p>	<p>Indicators: 4. Apply laws of exponents to solve for unknowns. 5. Apply trigonometric functions and inverse trigonometric functions in problem solving. 6. Apply and confirm trigonometric identities. 7. Solve trigonometric equations using appropriate methods. 8. Perform partial fraction decomposition. 9. Represent relations in parametric form. 10. Solve logarithmic and exponential functions including business, financial and scientific applications. 11. Represent relations in parametric form. 12. Analyze composition of functions. 13. Convert between polar and rectangular coordinates and equations. 14. Investigate sequences and series recursively and explicitly. 15. Use summation notation to represent a series and vice versa. 16. Find simple limits. 17. Apply the definition of a derivative and use techniques of differentiation to solve a polynomial. 18. Analyze and describe characteristics of functions by examination of their equations and graphs (e.g., exponential, logarithmic, polynomial, radical, rational and trigonometric).</p>	<p>Indicators: 19. Explore and analyze the unit circle. 20. Solve triangles trigonometrically (e.g. applications: force and navigation). 21. Simulate motion using vectors. 22. Describe characteristics of functions by examination of their equations and graphs (e.g., exponential, logarithmic, polynomial, radical and rational). 23. Analyze parametric graphs including conic sections and motion. 24. Analyze polar graphs. 25. Represent conics in polar and parametric form.</p>	<p>Indicators: 26. Find the trigonometric values for a given angle. 27. Use radian and degree angle measurement in conversions and applications.</p>	<p>Indicators: 28. Use interval notation to describe domains and ranges. 29. Analyze and manipulate the trigonometric form of complex numbers. 30. Perform vector operations (graphically and in component form) to solve applications and determine resultants. 31. Expand powers of binomials using the binomial theorem.</p>