

# NCTM Focal Points & Connections – A Quest for Coherence (in brief)

These topics are recommended content emphasis. It is essential that these focal points be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations.

This document was synthesized by Jon Wiens and Cathy Brown

	Focal Points			Connections
<b>Pre-K</b>	<b>Number and Operations</b> Whole numbers, including correspondence, counting, cardinality and comparison	<b>Geometry</b> Identify shapes and describe spatial relationships.	<b>Measurement</b> Identify measurable attributes and compare objects using these attributes	<ul style="list-style-type: none"> <li>• Data Analysis</li> <li>• Number and Operations</li> <li>• Algebra</li> </ul>
<b>K</b>	<b>Number and Operations</b> Represent, compare and order whole numbers and join/separate sets	<b>Geometry</b> Describe shapes and spaces	<b>Measurement</b> Order objects by measurable attributes	<ul style="list-style-type: none"> <li>• Data Analysis</li> <li>• Geometry</li> <li>• Algebra</li> </ul>
<b>ONE</b>	<b>Number and Operations and Algebra</b> Understanding addition and related subtraction strategies and facts.	<b>Number and Operations</b> Whole number relationships including grouping in tens and ones.	<b>Geometry</b> Compose and decompose geometric shapes	<ul style="list-style-type: none"> <li>• Number + Operations and Algebra</li> <li>• Measurement and Data</li> <li>• Analysis</li> <li>• Algebra</li> </ul>
<b>TWO</b>	<b>Number and Operations</b> Understanding the base-ten numeration system and place-value concepts.	<b>Number and Operations</b> Quick recall of addition and related subtraction facts	<b>Measurement</b> Linear measurements and facility in measuring lengths	<ul style="list-style-type: none"> <li>• Number + Operations</li> <li>• Geometry and Measurement</li> <li>• Algebra</li> </ul>
<b>THREE</b>	<b>Number and Operations and Algebra</b> Understanding multiplication and related division strategies and facts	<b>Number and Operations</b> Understanding fractions and fraction equivalence	<b>Geometry</b> Describe and analyze properties of 2-dimensional shapes	<ul style="list-style-type: none"> <li>• Algebra</li> <li>• Measurement</li> <li>• Data Analysis</li> <li>• Number + Operations</li> </ul>
<b>FOUR</b>	<b>Number and Operations and Algebra</b> Quick recall of multiplication and related division facts	<b>Number and Operations</b> Understanding decimals including the connections between fractions and decimals	<b>Measurement</b> Understanding area and determining the areas of 2-dimensional shapes	<ul style="list-style-type: none"> <li>• Algebra</li> <li>• Geometry</li> <li>• Measurement</li> <li>• Data Analysis</li> <li>• Number + Operations</li> </ul>
<b>FIVE</b>	<b>Number and Operations and Algebra</b> Understanding and fluency with division of whole numbers	<b>Number and Operations</b> Understanding and fluency with addition and subtraction of fractions and decimals	<b>Geometry, Algebra and Measurement</b> 3-dimensional shapes — properties including volume and surface area	<ul style="list-style-type: none"> <li>• Algebra</li> <li>• Measurement</li> <li>• Data Analysis</li> <li>• Number + Operations</li> </ul>
<b>SIX</b>	<b>Number and Operations and Algebra</b> Understanding and fluency with multiplication and division of fractions and decimals	<b>Number and Operations</b> Connecting ration and rate to multiplication and division	<b>Algebra</b> Writing, interpreting and using mathematical expressions and equations	<ul style="list-style-type: none"> <li>• Number + Operations</li> <li>• Algebra</li> <li>• Geometry and Measurement</li> </ul>
<b>SEVEN</b>	<b>Number and Operations, Algebra and Geometry</b> Understanding and applying proportionality, including similarity	<b>Geometry, Algebra and Measurement</b> Formulas to determine surface areas and volumes of 3-dimensional shapes	<b>Number and Operations and Algebra</b> Understanding operations on all rational numbers and solving linear equations	<ul style="list-style-type: none"> <li>• Geometry &amp; Measurement</li> <li>• Number + Operations</li> <li>• Data Analysis</li> <li>• Probability</li> </ul>
<b>EIGHT</b>	<b>Algebra</b> Analyzing and representing linear functions, solving linear equations and systems of linear equations	<b>Geometry and Measurement</b> Analyzing 2- and 3-dimensional space and figures using distance and angle	<b>Data Analysis, Number and Operations, Algebra</b> Analyzing and summarizing data sets	<ul style="list-style-type: none"> <li>• Algebra</li> <li>• Geometry</li> <li>• Data Analysis</li> <li>• Number + Operations</li> </ul>

