

## LEARNING PLAN

<p><b>Exploratory Activities</b></p> <p>Generate a set of attribute blocks (color, shape, size)</p>	<p><b>CONCEPT</b></p> <p>Logic</p>
<p><b>Concept Development Activities</b></p> <p>Guess My Rule (Venn Diagrams)          The language of logic (<math>\wedge</math>, <math>\vee</math>, <math>\neg</math>, <math>\rightarrow</math>, <math>\leftrightarrow</math>)          Explorations of logic using attribute blocks</p>	<p><b>Materials and Resources</b></p> <p>Attribute blocks          Large rings</p>
<p><b>Basic Facts and Standard Algorithms Formalized</b></p> <p><i>Geometry: Explorations and Applications</i>; McDougal Littell          Sections 1.3, 3.1, 3.5, 3.7, and Appendix 2</p> <p>Develop an awareness of logical reasoning. b1A          Determine if the converse of a conditional statement is true or false. b3A          Demonstrate what it means to prove mathematically that statements are true. b3C          Use inductive reasoning to formulate a conjecture. b3D          Use deductive reasoning to prove a statement. b3E</p>	<p><b>Originality and Creativity</b>  <i>Student Products</i></p> <p><b>Written</b></p> <p>Write a letter to a friend explaining the difference between deductive and inductive reasoning.</p> <p><b>Verbal</b></p> <p>Design and conduct a mock interview to explain to a classmate that you understand the relationships among a given conditional, its converse, inverse, and contrapositive.</p> <p><b>Kinesthetic</b></p> <p>Using logic blocks, demonstrate your understanding of the relationships among a given conditional, its converse, inverse, and contrapositive.</p> <p><b>Visual</b></p> <p>Create a mural depicting a given conditional statement, its converse, inverse, and contrapositive.</p>
<p><b>Assessment</b></p> <p>Write two conditional statements. One should be from a real-world situation and one should be mathematical. Write the inverse, converse, and contrapositive of each statement. Tell whether each of these statements is true or false. Give a counterexample for each false statement. (p.152 #39)</p> <p>Make a chart with examples of the four types of conditional statements. Assume the conditional is true. Indicate on the chart whether each of the others is always, sometimes, or never. (p.153 #13)</p> <p>Give an example of a conditional statement that is true but whose converse is false.</p>	