



**Mathematics Planning Template  
Grade 6**

STRANDS: NUMBER			
TOPICS/OBJECTIVES	MAIN CONCEPTS	TEACHING/LEARNING ACTIVITIES	ASSESSMENT/HOMEWORK ACTIVITIES
<p>1. Read, write and use numbers, using the principle of place value, in the Hindu - Arabic system of numeration.</p> <p>2. Write numbers in exponential form.</p>	<ul style="list-style-type: none"> <li>Place Value</li> <li>Face Value</li> <li>True Value</li> <li>Exponents</li> </ul>	<ul style="list-style-type: none"> <li><u>Activity: Number Clues: Please see Resource Document page 1</u></li> <li>Allow students to use digit cards to create own eight digit numbers.</li> </ul> <div style="text-align: center;"> </div> <p>Direct students to arrange cards to show largest/ smallest possible number. Encourage students to justify their arrangements.</p> <ul style="list-style-type: none"> <li>Allow students to colour code the <i>periods</i> on the place value chart.               <ol style="list-style-type: none"> <li>How are the <i>periods</i> clustered?</li> <li>How is the ones period similar/different from the thousands/millions <i>periods</i>?</li> </ol> </li> <li>Allow students to model numbers on the place value chart using colour coded counters. <i>Please see resource document page 2</i></li> <li>In pairs or table partners allow students to demonstrate their understanding of the value of each digit. Get students to use at least two representations to explain the value of each digit in the numbers created. (Base ten pieces, place value charts, drawings, money, number cards etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Allow students to answer questions printed on stack cards:</li> </ul> <div style="background-color: #4a86e8; color: white; padding: 5px; border-radius: 10px; margin-bottom: 10px;"> <p>How do you read whole numbers with six or eight digits?</p> </div> <div style="background-color: #4a86e8; color: white; padding: 5px; border-radius: 10px; margin-bottom: 10px;"> <p>How do you decide which of 2 six-digit numbers is greatest?</p> </div> <div style="background-color: #4a86e8; color: white; padding: 5px; border-radius: 10px;"> <p>How can you rename a whole number using place value ideas?</p> </div>



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		<ul style="list-style-type: none"><li>• Allow students to review situations in which the true value, place value and face value of given numbers were incorrectly identified and facilitate their explanations for correcting the situations.</li><li>• Allow students to explain their thinking when solving a problem. <i>Please see resource document page 4</i></li><li>• Facilitate a debate e.g. “<i>Be it resolved 139 hundreds is the same as 13900.</i>” Teams will reason for and against the moot with evidence to support their arguments (N.B the debate is to prove their stance and not necessarily to refuse the claim of the other team.)</li><li>• <b>Explore Exponents:</b> Expand, simplify, and evaluate expressions involving exponents:</li><li>• Have students compare the decades and explain the similarities and differences between given pairs e.g. <b>10, 100, 1000</b></li><li>• Have students identify the base and index of an exponent and represent its meaning in a real world context.</li><li>• Allow students to make their own definition of <i>Exponent/ Exponential Form by completing the model below:</i></li></ul>	<ul style="list-style-type: none"><li>• Have students complete the communication checklist. <i>Please see resource document page 2</i></li></ul>



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		<p style="text-align: center;"><b>Frayer Model</b></p> <table border="1" style="margin: auto;"><tr><td style="width: 50px; height: 100px; vertical-align: top;">Definition</td><td style="width: 50px; height: 100px; vertical-align: top;">Characteristics</td></tr><tr><td style="width: 50px; height: 100px; vertical-align: top;">Examples</td><td style="width: 50px; height: 100px; vertical-align: top;">Non-examples</td></tr></table> <p style="text-align: center;">WORD</p>	Definition	Characteristics	Examples	Non-examples	
Definition	Characteristics						
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TOPICS/OBJECTIVES	MAIN CONCEPTS	TEACHING/LEARNING ACTIVITIES	ASSESSMENT/HOMEWORK ACTIVITIES
<ol style="list-style-type: none"> <li>1. Identify members of finite and infinite sets.</li> <li>2. Associate the members of a set with the properties of a set.</li> <li>3. Name and list members in the intersection or union of two sets.</li> <li>4. Draw Venn diagrams to show the intersection or union of two sets.</li> <li>5. Use the symbols associated with set operations – intersection and union.</li> </ol>	<ul style="list-style-type: none"> <li>• Finite set</li> <li>• Infinite set</li> <li>• Members of a set</li> <li>• Set Symbols</li> <li>• Intersection of a set</li> <li>• Union of a set</li> <li>• Venn Diagram</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Allow students to, create cards of infinite and finite sets</b>, for example, whole numbers, factors of 30, multiples of 5 and letters in the word NUMBERS including the empty sets. Have them exchange the set of cards with other groups and facilitate the sorting of the cards into two groups: Finite sets and Infinite sets.</li> </ul> <p>Have students share their responses and provide explanation for the groupings into the two types of set. <i>Please see resource document page 8</i></p> <ul style="list-style-type: none"> <li>• <b>Have students work collaboratively to make a human Venn diagram.</b> Take the class outside or where there is adequate space to set up a Venn diagram using 3 circles. Go to one of the circles and ask for all the students who have black straight hair to come stand in the circle. Move to the next circle and ask for the students who are wearing brown shoes to stand in the second circle.</li> </ul> <p>➤ <b>Guide Questions</b></p> <ol style="list-style-type: none"> <li>i. Ask where the students should stand who have black straight hair and are wearing brown shoes? (where the two circles overlap)</li> <li>ii. Select a third category (if you are an athlete, for instance) and ask students to position themselves in the third circle.</li> <li>iii. Again ask where students with two of the three items should stand and where should someone stand that matches all of the requirements.</li> <li>iv. Also, ask where students should stand that do not meet any of the requirements (stay out in the universal set).</li> <li>v. Proceed to ask the students a series of questions. If you have black straight hair and are wearing brown shoes stay standing, if not sit/squat. Ask what symbol the "and" in the sentence represents?</li> <li>vi. If you are only an athlete stand and everyone else sit (what</li> </ol>	<ul style="list-style-type: none"> <li>• Complete worksheet: <i>Please see resource document pages 11 to 15</i></li> </ul>



		<p>does this means?).</p> <ul style="list-style-type: none"><li>• Use two rings that may be drawn or otherwise created using strings or other materials from the environment to enclose a variety of objects. Sort objects using just one ring (inside or outside) then two rings to discover the need to overlap them and discover the idea of intersection among two sets. (Allow students to critically analyze each stage). <b><i>Please see resource document page 9 and 10</i></b></li><li>• List and count the members in various subsets of an assortment of Venn diagrams (including non-general ones). Describe these intersections in words and in terms of set algebra, for example, <math>A \cap B</math> or <math>A \cup B</math> <b><i>Please see resource document page 7</i></b></li><li>• In groups examine the characteristics of given objects (for example, set of different shoes), then organize and represent them using a Venn diagram.</li><li>• Have students critically analyze the Venn diagram and state their observations.</li></ul>	
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