

What is it that we want our students to know, understand, do and communicate KUDCO?					
Year Level: Four	Semester: One	Subject: Maths	Team Members: Melina Shenoy, Claire Crozier, Adriana Jankulovski, Debbie Arnheim, Melanie Barger		
Essential Learning What is the essential learning? Describe in student friendly vocabulary.	Example-Rigor What does proficient student work look like? Provide an example and/or description.	Prior Skills Needed What prior knowledge, skills and/or vocabulary are needed for a student to master this essential learning?	Common Assessments What assessment/s will be used to measure student mastery?	When taught? When will this essential learning be taught?	Extension Skills What will we do when students have already learned this essential learning?
<p><i>(Number and Place Value)</i></p> <p>I can investigate and use the properties of odd and even numbers</p> <p><b>Learning Target:</b> I can:</p> <ul style="list-style-type: none"> <li>- Predict and investigate whether the answer to the addition, subtraction and multiplication of two whole numbers is odd or even</li> <li>- Use my knowledge of the relationship between odd and even numbers to check the accuracy of calculations</li> </ul>	<p>I know what happens when 2 even/odd numbers, or an odd and even number are added, subtracted or multiplied</p> <p>I can explain why the answer to the addition, subtraction and multiplication of two whole numbers is odd or even</p> <p>Addition:  <math>E + E = E</math>  <math>E + O = O</math>  <math>O + O = E</math></p> <p>Subtraction:  <math>E - E = E</math>  <math>E - O = O</math>  <math>O - O = O</math></p> <p>Multiplication:  <math>E \times E = E</math></p>	<p>I know the difference between odd and even numbers.</p>	<p>CFA, Pretest</p>		

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	<p><math>O \times O = O</math>  <math>O \times E = E</math></p>				
<p><i>(Number Patterns)</i>                  I understand and can continue number sequences involving multiples of 3,4,6,7,8 and 9 as well as unit fractions on a number line.  <b>Learning Targets:</b>                  I can:                  - identify whole number and unit fraction patterns.                  - understand patterns involving multiples.                  - apply multiplication strategies to whole number and unit fraction patterns.</p>	<p>I can model and explain how I skip count by 3,4,6,7,8 and 9.</p> <p>I can model and explain how I skip count by halves, thirds, quarters, fifths, eighths and tenths.</p> <p>I can demonstrate my understanding of increasing and decreasing number sequences involving multiples- identify, describe and continuing the pattern..  <i>E.g. 12, 16, 20, __, __, __</i>  <i>Identify: It's increasing by the same amount each time.</i>  <i>Describe: This pattern is increasing by 4 each time.</i>  <i>Continue: 12, 16, 20, 24, 28, 31</i></p> <p>I can identify missing parts of patterns involving multiplication and explain my thought process.</p>	<p>Know the multiplication facts for 2's, 5's, and 10's and patterns within.                  Can do repeated addition.                  Can do repeated subtraction                  Know their doubles                  Can skip count by 2s, 5s and 10s from any given number.                  Know odd and even numbers.                  Knows what a <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{8}</math>, <math>\frac{1}{10}</math> is.</p>	<p>Envision or CTM assessment (written and verbal).</p>	<p>Term 1: Weeks 6-7</p>	<p>I can identify number patterns when the pattern involves more than one operation.                  E.g. 5, 11, 23, __, __,                  __  <i>Identify: It's increasing by a different amount each time.</i>  <i>Describe: This pattern is doubling the starting number and then adding 1.</i>  <i>Continue: 5, 11, 23, 47, 95, 191</i></p>
<p><i>(Multiplication Facts)</i>                  I can recall multiplication facts up to 10 x 10, related division facts and describe resulting</p>	<p>I can use fact families (three for free)</p> <p>I can use calculators to check my answers.</p>	<p>I know what repeated addition is.</p> <p>I can record number sentences.</p>	<p>Pretest, CFA's and Post Test to be determined in Term 3.</p>	<p>Term 2: Weeks 4 - 5 (revisited in Week 9)</p>	<p>I can recall multiplication facts up to 10X10 with automaticity (fluency).</p>

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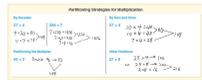
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<p>multiplication number patterns.</p> <p><b>Learning Targets:</b></p> <p>I can use:</p> <ul style="list-style-type: none"> <li>- digital technologies to check my answers</li> <li>- multiplication facts</li> <li>- estimate to check that my answers are reasonable.</li> <li>- Reasoning and problem solving</li> </ul>	<p>I can work out <math>9 \times 7</math> by:  <math>7 \times 10 = 70</math> so <math>70 - 7 = 63</math>.                      (nearest known facts)</p> <p>I can work out multiplication sentences using known strategies.                      Eg. <math>4 \times 6</math> is the same as <math>(2 \times 6) \times 2</math>.</p> <p>I can estimate and compare to check my answers. I know that <math>7 \times 5 = 35</math> so I know that <math>7 \times 7</math> needs to be more.</p> <p>I understand Part, Part, Whole in relation to multiplication.</p> <p>I can identify multiplication number patterns.                      EG. 2, 4, 6, 8 (all even numbers)                      3, 6, 9, 12, 15, 18, 21, 24, (odd/even and repeats at 30.)</p> <p>I can demonstrate problem solving using multiplication strategies.</p> <ul style="list-style-type: none"> <li>- repeated addition</li> <li>- double doubles (<math>5 \times 4 = 5 \times 2 \times 2 = 20</math>)</li> </ul>	<p>I can recall basic addition number facts.</p> <p>I know what multiplication is.</p> <p>I know how to double and double again using simple numbers.                      eg. <math>2 + 2 + 2 + 2 = 4 + 4</math></p> <p>I know what an array is.</p> <p>I can create and read simple arrays correctly.</p> <p>I know that division and multiplication are inverse operations.</p>			<p>I can use written and mental strategies to solve:</p> <p>2- digit x 1- digit                      2- digit x 2- digit</p> <p>Apply the rule of zero for multiplication.  <math>7 \times 5 = 35</math>  <math>70 \times 5 = 350</math>  <math>7 \times 50 = 350</math>  <math>70 \times 50 = 3500</math></p> <p>Apply the rule of zero for division.</p>
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	<ul style="list-style-type: none"> <li>- x3: double plus one</li> <li>- x4: double the double</li> <li>- x6: multiply by 3 then double</li> <li>- x7: learn them</li> <li>- x8: double the double, double</li> <li>- x9: multiply by 10 and subtract the number</li> </ul>				
<p><i>(Division &amp; Multiplication)</i> I can solve multiplication and division problems using efficient written and mental strategies. <b>Learning Targets:</b> I can use: -digital technologies to check my answers -estimate to check that my answers are reasonable -Reasoning and problem solving</p>	<p>I can explain and demonstrate various strategies, which may include:</p> <ul style="list-style-type: none"> <li>- split strategy</li> <li>- expanded form</li> <li>- part, part, whole</li> <li>- basic number facts</li> <li>- partitioning</li> </ul>  <p>I can use calculators to check my answers.</p> <p>I can use fact families (three for free)</p> <p>I can use my multiplication knowledge to help me with division. eg. 49/7. I know that 5x7 =35 so I add 2x7=14</p> <p>I can work out division sentences using known strategies</p>	<p>I know what repeated subtraction is and how to do it.</p> <p>I understand that division is the inverse operation of multiplication.</p> <p>I can halve numbers. Eg. 24/12 = 12.</p> <p>I can use arrays to partition the whole.</p> <p>I know what multiplication is.</p> <p>I know what division is.</p>	<p>Pretest, CFA's and Post Test to be determined in Term 3 (Prior to week 5).</p>	<p>Term 2: Weeks 8-9 (revisited with Multiplication in weeks 10 -11) *Term 2: Week 9</p>	<p>What happens when you divide a number and it does not divide evenly? (Remainders) Can record the remainder in different ways, as a whole number 1, as a fraction ¼ and as a decimal .25.</p> <p>I can identify factors and products of numbers.</p>

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	<p>24/4. I know that half of 24 is 12 and half of 12 is 6. I know that 6 can go into 24 four times.</p> <p>I can estimate and compare to check my answers. I know that <math>70/10=7</math> so I know that <math>60/10</math> needs to be less.</p> <p>I understand Whole, Part, Part in relation to division.</p>				
<p><i>(Patterns and Algebra)</i> I can identify unknown quantities in number sentences involving addition and subtraction. <b>Learning Targets:</b> I can: - Use basic number facts to find an answer - Justify solutions - Use a range of strategies - Use inverse operations</p>	<p>I can use inverse operations to find missing quantities.</p> <p>I can balance both sides to an equation. Eg. <math>3 + \_ = 15</math> or <math>15 = 3 + \_</math></p> <p>I can use basic number facts to find missing quantities</p> <p>I can use a range of strategies to justify my solution - use: - the inverse operation - pictures, numbers, words - calculators - known facts</p>	<p>I know what addition and subtraction are.</p> <p>I know basic number facts: - Doubles, tens facts, near doubles, etc</p> <p>I know part/ part/ whole and the inverse.</p>	<p>CFA, Pretest</p>		<p>I can use my knowledge of equivalent number sentences to solve unknown problems involving addition &amp; subtraction. E.g. <math>23 + 17 = 12 + ?</math> OR <math>23 + 17 = 72 - ?</math></p> <p>I can use my knowledge of equivalent number sentences to solve unknown problems involving all 4 operations. E.g. <math>90 - ? = 5 \times 6</math> OR <math>56 / 7 = ? \times 2</math></p> <p>I can balance both sides to an equation.</p>

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<p><i>(Scaled instruments)</i> I can use scaled instruments to measure length, area and angles. <b>Learning Targets:</b> I can: - estimate, reason and measure quantities - use instruments to measure</p>	<p>I can estimate and then measure: - Angle - Length - Area</p> <p>I can select the correct instrument to measure a specific unit. eg. ruler = length thermometer = temperature Protractor = angles</p> <p>I can explain how I estimated my measurement.</p>	<p>Know the difference between informal and formal units of measurement and give examples of each.</p> <p>I know different scales: Eg. mm, cm, m, km, g, kg, ml, L, I can read simple scales on measurement instruments. I can use a ruler. I know a range of measurement vocabulary.</p> <p>I can estimate using informal measuring units. eg. hands, feet, blocks, unifix groups</p>	<p>Hands on activities incorporating the use of scaled instruments. Example pre-CFA: Find the length of various distances within the classroom using a 30cm ruler and a 1m ruler.</p>	<p>Term 2: weeks 5-6 ongoing (into Semester 2 with different measurement units)</p>	<p>I can convert between units of measurement and I can provide examples of how they are related.</p>
<p><i>(Area of shapes)</i> I can compare the areas of regular and irregular shapes using informal units. <b>Learning Targets:</b> I can use informal units to find the area of: - regular shapes - irregular shapes</p>	<p>I can find the area of regular shapes (square, rectangle, triangle) using estimations and through investigations.</p> <p>I can explain what regular and irregular shapes are and give examples.</p> <p>I can define area mathematically.</p> <p>I can investigate and find the area of irregular shapes using informal units such as</p>	<p>Know what regular shapes are and give examples.</p> <p>I have a simple understanding of what area is.</p>	<p>2 shapes - justify which one has the greater area and by how much, using informal units of measurement as evidence.</p>	<p>Term 2, weeks 7-8</p>	<p>I can use regular shapes to find the area of irregular shapes.</p> <p>I can find the area of regular shapes using formal units.</p> <p>I can compare the areas of regular and irregular shapes using formal units.</p>

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	<p>MAB, unifix, tessellated shapes, and explain why certain objects are better to use than others (eg. MAB Vs counters - Which is better to use and why?).</p> <p>I can explain how I estimated the area of a shape.</p>				
<p><i>(Mapping)</i> I can interpret information contained in maps. <b>Learning Targets:</b> I can:</p> <ul style="list-style-type: none"> <li>- identify the features of a map.</li> <li>- find locations on a map using coordinates and cardinal compass points.</li> <li>- determine distance on a map.</li> <li>- navigate between two points.</li> </ul>	<p>I can interpret information on a map such as scales, keys, compass points, grid references, legends and major features.</p> <p>I can navigate between two locations on a map given that the direction I'm facing can change as I move.</p> <p>I can identify where I am on a map. (identify directionality on a map and how that changes depending on your position)</p> <p>I can refer to a scale on a map and discuss what it is used for.</p>	<p>I know what a map is. I can identify the basic features of a map (e.g. key, compass, points of interest, symbols).</p> <p>I am familiar with different types of maps. Eg. street, treasure, world, Google maps.</p> <p>I know my left and right.</p>	<p>CFA- Show how you get from point A to point B on a map.</p> <p>CFA-Provide map, students to follow directions to a certain location and to work out the distance travelled.</p>	Term 2, weeks 3-4	I can transfer my knowledge between maps e.g. world maps, atlases, globes, melways, google maps, gps.
<p><i>(Angles)</i> I can compare angles and classify them as greater than, less than,</p>	<p>I can locate, identify and compare angles in everyday use. Locate in.... Classrooms Playground</p>	<p>I can recognise different angles; acute, obtuse, straight, reflect and right angle.</p>	<p>CFA - Compare and name angles using greater than, less than and equal to right angles.</p>	Term 1: Weeks 6 and 7	I understand the difference between a straight line and a Revolution.

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<p>and equal to a right angle.</p> <p><b>Learning Targets:</b> I can:</p> <ul style="list-style-type: none"> <li>- identify a right angle.</li> <li>- identify an acute, obtuse, straight and reflex angle.</li> <li>- identify the relationship between a right angle and other angles.</li> </ul>	<p>I can identify and explain the relationship between acute, right, obtuse and reflex angles.</p> <p>I can compare acute, obtuse, straight, reflect and revolution angles to a right angle.</p> <p>I understand that the size of an angle is not relevant to the size of an object.</p>	<p>I know right angles and how many degrees of turn it is.</p> <p>I know greater than, less than and equal to symbols.</p>			<p>To understand how angles combine and add up to become a new/different angle and how they fit inside shapes.</p> <p>I can identify the measurement of angles.</p> <p>I can identify complementary angles and explain what they are.</p>
<p><i>(Chance and Probability)</i></p> <p>I can describe and compare everyday events as being less, equally or more likely to happen.</p> <p><b>Learning Targets:</b> I can:</p> <ul style="list-style-type: none"> <li>- identify the chance of an event occurring</li> <li>- order events (likely to least likely)</li> <li>- compare the likelihood of events</li> </ul>	<p>I can describe possible everyday events and order their chances of occurring (eg. How likely is it that you will eat lunch today?)</p> <p>I can compare the chance of familiar everyday events and order them from 'least likely' to 'most likely' to occur.</p>	<p>Understands terms of chance (likely, possible, certain, etc) Can order events using a probability line.</p>	<p>Provide students a scenario of a chance event. Students explain possible outcome using the appropriate vocabulary related to unit.</p>	<p>Term 2: Weeks 9-11</p>	<p>To use percentages or fractions related to chance (50%, 25%) to describe the likelihood of an event occurring.</p>

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<p><i>(Data Representation and Interpretation)</i> I can use data to construct data displays with and without digital technology.</p> <p><b>Learning Targets:</b> I can:</p> <ul style="list-style-type: none"> <li>- Collect data</li> <li>- Use given data</li> <li>- Construct data displays without technology</li> <li>- Create data displays with technology</li> <li>- Interpret data to create displays</li> </ul>	<p>Ask targeted questions to gather specific data.</p> <p>I can collect data using tallies, feedback, surveys.</p> <p>I can create a data display with and without technology.</p> <p>I can read my data and choose the most appropriate display for it.</p>	<p>Understand how to tally</p> <p>Read tables, bar graphs, column graphs, tallies</p> <p>Understand how to survey a group</p> <p>Understand that questions can be used to gather data</p> <p>I can construct data display with appropriate features: title, labeled x/y-axis, key, scale.</p>	<p>Creating a survey to effectively collect data and representing this in a variety of methods.</p> <p>A graph or table that is not labeled and they create question and title to match the provided data.</p>	<p>Term 2: Weeks 1-2</p>	<p>I can ask and answer questions about the data.</p> <p>I can draw conclusions about the data.</p> <p>I can analyse data (from media sources) and ask and answer questions from the data.</p>
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