## ELSP MATHEMATICS YR 5

### What is it that we want our students to know, understand, do and communicate KUDCO?

<table>
<thead>
<tr>
<th>Year Level: Five</th>
<th>Semester: Two</th>
<th>Subject: Mathematics</th>
<th>Team Members: Linda Turner, Brad Morin &amp; Tom Penberthy</th>
</tr>
</thead>
</table>

#### 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/application Skills
What will we do when students have already learned this essential learning?

#### Learning Target:
I can:
- multiply a three digit number by one or two digits.
- divide a three digit number by a one digit number, including those that result in a remainder.
- estimate as a strategy to check the reasonableness of my answer.
- I can explain and justify my answer.

| I can solve multiplication and division problems using the most efficient strategy. |
| I can solve multiplication and division problems using the most efficient strategy. |
| Arrays |
| Known facts |
| Factors and Multiples |
| Parts and Wholes |
| Times tables |

**Multiplication Strategy Checklist.**

- Explain how you check your working out and answer:

  - CFA’s as determined by the team and by intervention teachers as per need. (ACARA examples)
  - One overall open-ended task

**Term Three Week, 3, 4 and 5 Multiplication**

- Term Three Week, 6, 7, 8, Post test week 9.
- Revision and application week 10

**Division**

- Solve more complex multi-step multiplication and division problems.
- Explain and apply the inverse relationship between multiplication and division and use this to prove accuracy of answers.

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strategies and calculations.
- use a calculator to check the reasonableness of my answers

● I can apply the associative, commutative and distributive laws to aid mental and written computation

For example:
- build on known facts
- grid
- partitioning (hundreds, tens, ones)
- distributive law
- rule of zero

**Multiplication Strategy Checklist.**

Division:
I can use progressive continuum to determine the most efficient strategy

**Division Strategy Checklist.**

- Fact families: (prior knowledge of multiplication and known facts)
- Part, Part, Whole:

- Long but forgiving:
Start with what you know (10s, 5s, 2s).
For example: I know 10 x 60s = 600, and 1 x 60 = 660 and that’s 11 lots of 60. So, 660/10 = 11.
- Partitioning (hundreds, tens, ones)

Post test as per students pre tests at the start of term.

Developed by the team.

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**ELSP MATHEMATICS YR 5**

| I can solve problems by identifying factors and multiples of a whole. | Problem Solving Strategies - Tool Box | I can solve a variety of different worded problems For example: You are given the whole and need to find the factors/parts. Or, You are given the factors/parts, find the whole.
Multi step problems = reasoning. |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>For example: I don’t know my 16 times tables, but I know my 10s and my 6s.</td>
<td>Open ended Identifying Prime Numbers on a 100s chart. Using 100 lollies, how many different ways can you make party bags? Problem Solving Strategies - After unpacking these thoroughly. Why did they use this.</td>
<td>Term 3 Week 1 and 2</td>
</tr>
<tr>
<td>I know what a factor is. I know what a multiple is. I know what prime and composite numbers are in relation to the whole. I have 42 cookies, I need to put 7 cookies on each plate. How many plates do I need? I have 44 cookies, there are 7 cookies on each plate. How many plates do I need.</td>
<td>Term Four, Week 1-5</td>
<td></td>
</tr>
<tr>
<td>I understand that number patterns assist me with finding factors and multiples.</td>
<td>CFA as determined by the team. (ACARA examples) for example evidence of a continuing pattern that is consistently adding or subtracting the same number.</td>
<td></td>
</tr>
<tr>
<td><strong>Learning Targets:</strong> - <strong>Increasing</strong></td>
<td>I can: - create a sequence involving whole numbers, decimals and fractions</td>
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</table>

**Problem Solving Strategies**

- **Tool Box**
- What are the problem solving strategies?
- What do they look like?

- **Open ended**
- Identifying Prime Numbers on a 100s chart.
- Using 100 lollies, how many different ways can you make party bags?
- Problem Solving Strategies - After unpacking these thoroughly. Why did they use this.

**Learning Targets**

- **Increasing**

**Adding and subtracting**

- Simple factors and multiples (skip counting, repeated addition/subtraction)
- Patterns can appear in many ways

**CFA as determined by the team. (ACARA examples)**

**Term Four, Week 1-5**

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### ELSP MATHEMATICS YR 5

<table>
<thead>
<tr>
<th>Learning Target</th>
<th>For example:</th>
<th>Pre test and post test to determine differentiation</th>
<th>BODMAS examples and modelling of this type of more complex operations, where there is large variety of operations on both sides of the = sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>- decreasing</td>
<td>knowledge of number relationships.</td>
<td>Begin with a specific number or count by a specific number.</td>
<td>- describe a sequence involving whole numbers, decimals and fractions and explain my reasoning and understanding</td>
</tr>
<tr>
<td>- fractions</td>
<td>I can use the problem solving strategies - To working backwards to solve problems. Guess and Check etc...</td>
<td>Lots of variation in the appearance of the patterns.</td>
<td>- continue number patterns using fractions, decimals and whole numbers. (R)</td>
</tr>
<tr>
<td>- decimals</td>
<td>2 lots of a number is equal to 4 lots of 6. Solves number sentences such as $(12 \times 7) = 3 \times \square$ &amp; $3 \div 4 = 15 \div \square$</td>
<td>Four proficiencies of operations.</td>
<td></td>
</tr>
<tr>
<td>- whole numbers</td>
<td>I can show how number sentences balance.</td>
<td>Equal means they balance on each side. 'fulcrum'</td>
<td></td>
</tr>
<tr>
<td>- I can use</td>
<td></td>
<td>Pre test and post test to determine differentiation</td>
<td></td>
</tr>
<tr>
<td>estimation as a</td>
<td></td>
<td>Examples of question types:</td>
<td></td>
</tr>
<tr>
<td>strategy</td>
<td></td>
<td>$99 / \square = 1 \times 11$</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$\square \times 2 = \square / 2$</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open ended: using a think board with an answer in the middle and 4 different equations around it.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make a number sentence that fits:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Term Four, Week 6, 7, 9, 10</td>
<td></td>
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<tr>
<th><strong>I can read and compare 12- and 24-hour time systems and convert between them</strong></th>
<th><strong>Learning Target:</strong></th>
<th><strong>I can show there are 24 hours in a day. I know antemeridian and postmeridian.</strong></th>
<th><strong>CFA as determined by the team. (ACARA examples)</strong></th>
<th><strong>Term Four, Week 4-7, Week 9</strong></th>
<th><strong>I can solve worded problems using a variety of time intervals and 24 hour time patterns etc.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I can use estimation as a strategy to convert between 12- and 24-hour time.</strong></td>
<td><strong>I can use estimation as a strategy</strong></td>
<td><strong>Simple addition and subtraction facts using effective strategies. Eg jump strategy.</strong></td>
<td><strong>Plan a day using 24 hour time.</strong></td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td><strong>I can tell the time in 24 hour mode.</strong></td>
<td><strong>I can tell the time in 24 hour mode.</strong></td>
<td><strong>Be able to tell the time.</strong></td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td><strong>I can determine elapsed time using a 12 and 24 hour clock.</strong></td>
<td><strong>I can determine elapsed time using a 12 and 24 hour clock.</strong></td>
<td><strong>Revise elapsed time.</strong></td>
<td>****</td>
<td>****</td>
<td>****</td>
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<tr>
<th><strong>I can use a grid reference system to describe locations. Describe routes using landmarks and directional language.</strong></th>
<th><strong>Learning Target:</strong></th>
<th><strong>To use maps and grids to describe and interpret routes and locations. Use: Street names, direction travelled (NESW), which way to turn,</strong></th>
<th><strong>CFA as determined by the team. (ACARA examples)</strong></th>
<th><strong>Term Three, Week 5-8</strong></th>
<th><strong>I can read and interpret more complex maps and grids beyond the core Essential Learning.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I can use estimation as a strategy</strong></td>
<td><strong>I can use estimation as a strategy</strong></td>
<td><strong>I can use multimodal resources: Google Maps, VicRoads/Melways, Compass, Illustrated Map with scale,</strong></td>
<td><strong>Design a route around the city. (As per our city excursion)</strong></td>
<td>****</td>
<td><strong>I can design more complex maps and plan directions for these and direct others to follow these instructions.</strong></td>
</tr>
<tr>
<td><strong>I can give and follow directions using</strong></td>
<td><strong>I can give and follow directions using</strong></td>
<td><strong>North, East, South West. How to read a grid: A1, B2, C2, etc... Left and Right is subjective.</strong></td>
<td><strong>Display it using directional language. Also show the same route on google maps.</strong></td>
<td>****</td>
<td>****</td>
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<th><strong>formal directional language.</strong></th>
<th>Ipad/ iPhone, GPS (NavMan, TomTom)</th>
<th>I can describe the step by step directions.</th>
</tr>
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<tbody>
<tr>
<td>- I can use Google maps to solve real life mapping activities.</td>
<td>I can use more specific vocabulary: North NorthEast, North NorthWest, South SouthEast, South SouthWest.</td>
<td>Estimate distance travelled AND estimate the distance ‘as the crow flies’.</td>
</tr>
</tbody>
</table>

**I can estimate, measure and compare angles using degrees.**  
**Construct angles using a protractor.**

**Learning Targets:**  
- I can use estimation as a strategy  
- I can measure angles using a protractor  
- I can compare angles  
- I can measure angles  
- I can construct specific angles.  
- I can calculate a missing angle in a

| I can estimate the size and type of everyday angles.  
For example: That book shelf has a 90 degrees angle.  
The Danger Zone in footy is about 45 degrees from the goal square.  
| I know what an angle is.  
For every angle there is an related opposite angle.  
Arms(Lines), Vertix  
A full rotation is 360 degrees.  
How to divide 360 into parts.  
Obtuse  
Acute  
CFA as determined by the team.  
(ACARA examples)  
Rob V What is my Angle activity?  
Draw/create something and identify the angles and the size of them.  
Term Three, Week 1-4  
| Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning.  
Demonstrate that the angle sum of a triangle is 180° and use this to find the angle sum of a quadrilateral.  
| I can:  
- identify the side and angle properties of

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#### triangle and a quadrilateral
- I can use a protractor and digital technologies to measure and construct angles.
- What is the purpose of angles in real life? What would be the best/optimal angle to enhance the purpose? For example: Shape of roofs in Northern and Southern Hemisphere.

### Learning Target:
- I can list outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes.

| I can list outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes. | Before using any statistics, determine the probability variations. | Chance has no memory, if the event keeps returning to the initial. | CFA as determined by the team. (ACARA examples) | Term Three Week 9, 10 Term Four Week 1, 2, 3
|---|---|---|---|---|
| I can use estimation as a strategy | I can determine the possible results and select the best strategy to list possible outcomes: Tree Diagram Table Organised & systematic list | Identify everyday events where one event cannot happen if the other happens | Design an experiment, determine all the possibilities, collect data and display. | I can:
| - I can systematically deduce the probability of an outcome by using the most appropriate strategy | I can represent the statistics/data using fractions, decimals and percentages. | Simple/Common fractions Probability lines (ranging from zero to one) | CFA as determined by the team. (ACARA examples) | - represent probabilities as simple ratios and fractions

#### Chance Language:
- Improbable, Probably, definitely, possible, impossible, likely, unlikely etc.

<table>
<thead>
<tr>
<th>I can:</th>
<th>CFA as determined by the team. (ACARA examples)</th>
<th>Design an experiment, determine all the possibilities, collect data and display.</th>
<th>CFA as determined by the team. (ACARA examples)</th>
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<tr>
<td>- represent probabilities as simple ratios and fractions</td>
<td>- specify, list and communicate probabilities of events using fractions, decimals and percentages</td>
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<tr>
<th>0 to 1</th>
<th>I can use the outcomes to determine the probability/chance.</th>
</tr>
</thead>
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<tr>
<td>0 to 1</td>
<td>To understand that the probability of an event is a number between 0 and 1 that is a measure of the chance that a given event will occur. A probability of 0 indicates impossibility and that of 1 indicates certainty. A probability of ( \frac{1}{2} ) indicates an even chance of the event occurring.</td>
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