**ELSP MATHEMATICS YR 3**

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

<table>
<thead>
<tr>
<th>Year Level: Three</th>
<th>Semester: Two</th>
<th>Subject: Mathematics</th>
<th>Team Members: Renee Johnson, Maree Caminity &amp; Tom Rosenberg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Essential Learning</strong></td>
<td><strong>Example-Rigor</strong></td>
<td><strong>Prior Skills Needed</strong></td>
<td><strong>Common Assessments</strong></td>
</tr>
<tr>
<td>What is the essential learning? Describe in student friendly vocabulary.</td>
<td>What does proficient student work look like? Provide an example and/or description.</td>
<td>What prior knowledge, skills and/or vocabulary are needed for a student to master this essential learning?</td>
<td>What assessment/s will be used to measure student mastery?</td>
</tr>
<tr>
<td>I can automatically recall multiplication facts of twos, fives and tens and related division facts. <strong>Learning Target:</strong></td>
<td>I can verbally recall the multiplication facts of the 2’s/5’s/10s in sequence and out of sequence; eg: I know that 7x5 = 35</td>
<td>I can recognise number patterns involving 2s/5s/10s</td>
<td>Pre MaD: T3 W1</td>
</tr>
<tr>
<td>I know that 4 x 5 = 20 because I know that;</td>
<td>I can skip count in 2s/5s/10s from a 0 starting point</td>
<td>I can use repeated addition from 0 starting point</td>
<td>Fortnightly “mini check ups” and Friday conferences: Week 2 - 9 T3</td>
</tr>
<tr>
<td>● make links between additive patterns/skip counting/repeated addition and multiplication</td>
<td>I can use repeated addition from 0 starting point</td>
<td>I can explain what an array is - for multiplication and division (sharing it equally)</td>
<td>Post MaD: End of T3 W8</td>
</tr>
<tr>
<td>● explain or recognise the relationship between multiplication and division as ‘part,part,whole’</td>
<td>I know division as sharing equally</td>
<td>I know the operational signs ‘x’ and ‘÷’</td>
<td><strong>Division</strong></td>
</tr>
<tr>
<td>5+5+5+5 = 20 arrays</td>
<td><em>Working in Collaborative teams, examine all relevant documents, school scope and sequence, regional documents and AusVELS, and then apply the criteria of endurance, leverage and readiness to determine which standards are essential for all students to master. Remember, less is more. For each standard selected, complete the remaining columns. Complete the chart by the second or third week of each term/semester.</em></td>
<td><strong>Automatic recall of multiplication facts:</strong></td>
<td></td>
</tr>
<tr>
<td>I can use fact families/‘three for free’ to explain the link between</td>
<td>a. fours and eights</td>
<td>b. threes, sixes and nines</td>
<td>c. sevens</td>
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**BLUE** = Number and Algebra, **RED** = Measurement and Geometry, **GREEN** = Statistics and Probability.
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<tr>
<th>Learning Target:</th>
<th>I can represent and solve problems involving multiplication and division using efficient mental and written strategies.</th>
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<td><strong>Relational thinking:</strong></td>
<td>I know that $7 \times 5 = 35$ because $5 \times 5 = 25$ and it is two more fives.</td>
</tr>
<tr>
<td><strong>I can use additive thinking to show patterns using multiples:</strong></td>
<td>I can skip count in $2s/5s/10s$ from a 0 starting point.</td>
</tr>
<tr>
<td><strong>Problem solving skills (mathematicians toolbox):</strong></td>
<td>I can use repeated addition from 0 starting point.</td>
</tr>
<tr>
<td><strong>I can explain what an array is - for multiplication and division (sharing it equally):</strong></td>
<td>I can recognise number patterns involving $2s/5s/10s$.</td>
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Pre MaD: T3 W1

Fortnightly “mini check ups” and Friday conferences:

- Week 2 - 9 T3

Post MaD: End of T3 W8

MAJOR T3 WEEKS 1-8

**Multiplication**

Term 3 W1 - 3 & W7 - 8 combined with division

**Division**

Term 3 W 4 - 6 & Week 7-8 combined with multiplication

Problem solving using multiplicative thinking for:

- a. fours and eights
- b. threes, sixes and nines
- c. Sevens

Accurate estimation

Solve worded problems for multiplication and division

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**Patterns (eg. 4/8, 3/6/9).**
- Use calculators to explore number patterns and check my answers.

**I know division as sharing equally.**
- I know the operational signs ‘x’ and ‘÷’

**Learning targets:**
- I understand that fractions are part of a whole.
- I can show and explain 1/2, 1/4, 1/3, 1/5, 1/10 across all three fraction models.

**Fractions Pre:**
- T3 Week 10

**Fractions Mid CFAs:**
- End of each fortnight

**Fractions Post:**
- T4 W1-6

**Equivalent fraction & fraction walls**
- Adding/subtracting fractions
- Identify, model and explain unit fractions including ⅛, ⅜ and 1/9 across all three models.

**Application of fractional knowledge to problem solving.**

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**Fractions Wall Examples:**
- Fraction walls
- Number line

**I can explain how many parts make the whole.**
- Eg: I know that 4 quarters = 1 whole

**To be able to identify a whole, 1/2 and 1/4 and ⅛ of a an area model.**
- To able to identify a whole and ½ of a linear model
- To identify ½ of a collection (use of doubles/halving)

**I can identify and model unit fractions including 1/2, 1/4, 1/3, 1/5, 1/10 across all three fraction models.**

**I can calculate how fractional parts make a whole.**
- I can name fractions using range of vocab: 1/4 1 fourth or 1 in 4 and

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- **different visual representation**
  - I know that $1/2 + 1/2 = 1$ whole.
  - I know that three quarters plus one quarter equals 1 whole.

**Learning Targets:**
I can:
- I can name and explain the 3 dimensions of shape
- identify and explain the features of 3D objects
- explain the difference between a prism and a pyramid
- name and identify an increasing range of 3D objects
- recognise a variety of 3D objects from

I can draw and make a range of 3D objects and describe their features.

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<tr>
<td>I can label the key properties of 3D objects: eg: vertices, edges, faces.</td>
<td>I know that 1D is a line measured in length.</td>
<td>I know that 2D is a collection of lines measured in length and width.</td>
<td>I know that 3D is an object measured in length, width and height/depth.</td>
</tr>
<tr>
<td>I know that: Prism- rectangular sides, with matching opposing faces. Pyramid- dictated by the base eg. Square-based pyramid.</td>
<td>Describe, draw and name 2D shapes.</td>
<td>Name and identify basic 3D objects.</td>
<td>3D objects pre: T3 W4</td>
</tr>
<tr>
<td>3D objects post: T3 W6</td>
<td>T3 WEEKS 4-6</td>
<td>Draw and make a range of complex 3D shapes</td>
<td>Recognise and describe irregular 3D Shapes</td>
</tr>
<tr>
<td>Identify, draw and represent basic 3D objects from different perspectives.</td>
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### Learning Target:
- I can interpret and model digital, analogue and written representations of minutes, hours.

#### I can:
- Draw a variety of 3D objects from a variety of perspectives.
- Construct/deconstruct nets of a variety of 3D objects and identify their features.
- I can tell time to the nearest minute.

#### Learning Target:
- I can read and model time to the nearest minute using analogue and digital formats.
- I can label and identify the use of the Minute hand, Hour Hand and the Second Hand on a clock.
- I can recognize and explain when it is ‘o’clock’ on a digital and analogue clock.
- I can recognize and explain when it is half past on a digital and analogue clock.
- I can identify the date, days, weeks and months on a calendar.
- I can explain the difference between AM and PM.
- I can tell the time using the 24 hour clock: digital time.
- I can calculate the elapsed time.
- I can read and interpret a timetable.
- I can problem solve using my knowledge and understanding of time.

#### Application:
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<tr>
<th>Learning Target: I can interpret simple grid maps to show position and pathways</th>
<th>I can use a grid reference to locate features on a map.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can use directional language such as: left, right, up, down, forwards, backwards, half turn and quarter turn when giving directions.</td>
<td>I can use directional language such as: left, right, up, down, forwards, backwards, half turn and quarter turn when giving directions.</td>
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<tr>
<td>Grid map pre: T4 W7</td>
<td>Grid map post: T4 W8</td>
</tr>
<tr>
<td>T4 7-8</td>
<td>I can explain the connection between seconds, minutes, hours, days, weeks, months and years. E.g. I know that there are 60 seconds in a minute, etc</td>
</tr>
</tbody>
</table>

**Learning Target:** I can interpret grid maps of their local environment.
- I can use the grid references on a map to give and follow directions.
- I can explain and use the features of a map: Grid lines, key/legend and landmarks.

<table>
<thead>
<tr>
<th>Learning Target: I can describe turns as a half or quarter.</th>
<th>I can identify directions such as: left, right, up, down, forwards, backwards, half turn and quarter turn when giving directions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can recognize and use angles of turn in everyday situations. <strong>Learning Target:</strong> I can recognize and name angles in everyday life: clock face, letters, corners 2D shapes, rotations etc</td>
<td>I can identify situations where angles appear in everyday life: clock face, letters, corners 2D shapes, rotations etc</td>
</tr>
<tr>
<td>Angles pre: T3 W7</td>
<td>Angles post: T3 W8</td>
</tr>
<tr>
<td>T3 7-8</td>
<td>I can identify and explain how scales/ratios are used when reading a map.</td>
</tr>
<tr>
<td>I can solve real life mapping problems using my knowledge or scales and ratios.</td>
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<tr>
<th>I can use everyday language to describe angles and estimate:</th>
<th>I can classify a list of everyday events according to their likelihood.</th>
<th>I can measure angles accurately using a protractor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Quarter turn to the left</td>
<td>Chance pre: T4 W5</td>
<td>T4 WEEKS 5-6</td>
</tr>
<tr>
<td>● Half turn</td>
<td>Chance post: T4 W6</td>
<td></td>
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<tr>
<td>● Half way around etc.</td>
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<tr>
<td>● It did a full turn (spun around)</td>
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<tr>
<td>● It turned about… [X number of degrees]</td>
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<td></td>
</tr>
</tbody>
</table>

I know that:

>90 = acute
90 = right angle
<90 >180 = obtuse
180 = Straight
<180 = Reflex
360 = Revolution

I can estimate angles in everyday life, using the above benchmarks.

<table>
<thead>
<tr>
<th>I can conduct chance experiments, identify possible outcomes and recognise variations in results.</th>
<th>I can place the likelihood of events on a probability line using mathematical vocabulary such as:</th>
<th>I can express probability and chance as percentages and fractions.</th>
</tr>
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### Learning Target:

**I can:**
- place events from familiar contexts in order of how likely they are to happen and describe using mathematical vocabulary.
- recognise variation in results and explain its cause.

**Certain, More Likely, Likely, Even, 50/50, unlikely and Impossible.**

**I can explain the difference between dependent and independent events:**
- I know that the outcome of a coin toss is independent of previous outcomes.
- I know the outcome of drawing a particular card out of a deck is dependent upon the previous outcomes.

**I can create a probability line of chance events that includes numbers and chance language.**

**I can collect data, tally and create graphs with and without digital technologies.**

**Learning Target:**
**I can:**
- ask specific questions to collect data.
- select an appropriate tool for collecting data.

**I can design questions that can collect specific data.**

**I use tables, tallies and surveys to collect data.**

**I can create appropriate graphs that display collected data on differing scales:**
- Bar Graphs
- Column Graphs
- Line Graphs

**I can create and answer poll questions.**

**I can construct pictographs using a 1:1 scale.**

Data/tally/graph pre: T4 W1
Data/tally/graph mid: T4 W2
Data/tally/graph post: T4 W3

**T4 WEEKS 1-3**

**I can collect data and create more complex graphs with and without digital technologies.**

Such as:
- Multiple data set graphs
- Comparison graphs
- Differentiated Scales

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<tr>
<th>Learning Target: I can:</th>
<th>Key Features:</th>
<th>Comparing data pre:</th>
<th>Comparing data mid:</th>
<th>Comparing data post:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● select graphs that are appropriate for the data I have collected.</td>
<td>I can create graphs that represent data with and without technology.</td>
<td>T4 W1</td>
<td>T4 W2</td>
<td>T4 W3</td>
</tr>
<tr>
<td>● select the appropriate scale for representing data I have collected.</td>
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<tr>
<td>I can make comments and compare data displays (graphs).</td>
<td>Key Features:</td>
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<tr>
<td>Learning Target: I can:</td>
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<tr>
<td>● identify different types of graphs (pie, bar, line) and their features</td>
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<tr>
<td>● I can identify similarities and differences</td>
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<tr>
<td>● I can identify an effective way to represent a data set</td>
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<tr>
<td>E.g. If a particular variable receives no votes during a survey, is it better to represent that data set as a pie graph (won’t be able to see the 0%) or as a bar graph?</td>
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<tr>
<td>In addition:</td>
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<tr>
<td>I can explain that the x and y axis each represent a different variable.</td>
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<tr>
<td>I can make comments and compare data displayed in more complex graphs:</td>
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<td>E.g.: Multiple data set graphs</td>
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<td>Comparison graphs</td>
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<td>Differentiated Scales</td>
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- **interpret the calibration of the graph**
  For Eg:
  I can understand the difference between a y-axis that goes up by increments of 1/2s/5s/10s etc

- **make statements about the data displayed in a graph**
  For example:
  The total sample size was 15 students.
  5 students like chocolate.

- **make comparative statements between graphs**
  The most popular flavour was strawberry
  3 more people like strawberry than chocolate

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