

# Stage 3 Maths Program

Term I

Week 9

## NSW K-10 Mathematics Syllabus Outcomes

### Fractions and Decimals(1) – addition and subtraction

**MA3-7NA - Compares, orders and calculates with fractions, decimals and percentages**

- Determine, generate and record equivalent fractions
- Model and represent strategies to add and subtract fractions with the same denominator
- Add and subtract fractions, included mixed numerals, with the same or related denominators

### Time (1)

**MA3-13MG – Uses 24-hour time and am and pm notation in real-life situations, and constructs timelines**

Convert between 12- and 24-hour time

Determine and compare the duration of events

### Working Mathematically

- MA3-1WM - Describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
- MA3-2WM - Selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
- MA3-3WM - Gives a valid reason for supporting one possible solution over another

### Assessment

**Pre - Test - Refer to attachment**

**Post - Test - Refer to attachment**

**Learning Goal - Fractions and Decimals  
(refer to the outcome)**

**Success Criteria - Fractions and Decimals  
(refer to the indicators)**

**TIB - Adding and subtracting fractions is a key skill for many of the activities you will encounter on a daily basis.**

**Learning Goal - Time (refer to the outcome)**

**Success Criteria - Time (refer to the indicators)**

**TIB - 24 hour time is the most commonly used method of telling time in the world.**

**We need to compare the duration of events when managing our time participating in everyday activities.**

**Homework (Week 9, 10 and 11) - Budgeting Project**

# Mathematics Weekly Plan

Term – 1 2 3 4

Week – 1 2 3 4 5 6 7 8 9 10 11

Strands – Fractions and Decimals (1)/ Time(1)

		Monday	Tuesday	Wednesday	Thursday	Friday
Key Ideas:		Whole Number			Data	
Warm Up		Maths Game	Ninja Maths	Ninja Maths	5 Minute Frenzy	5 Minute Frenzy
Problem of the Day		<p><b>Pre-Test: Fractions &amp; Decimals</b></p> <p><b>Pre-Test: Time</b></p>	<p><i>One evening, a restaurant served a total of <math>\frac{3}{10}</math> of a loaf of wheat bread and <math>\frac{7}{10}</math> of a loaf of white bread. How many loaves were served in all?</i></p> <p><i>Simplify your answer and write it as a proper fraction or as a whole or mixed number.</i></p> <p><i>Add the numerators:</i></p> $\frac{3}{10} + \frac{7}{10} = \frac{10}{10}$ <p><i>Write the answer in simplest form. Divide both the numerator and the denominator by 10.</i></p> $\frac{10}{10} = \frac{1}{1} = 1$ <p><i>The restaurant served 1 loaf of bread.</i></p>	<p><i>Jeffrey's bus ride to school is <math>17\frac{4}{5}</math> miles and Mike's bus ride is <math>8\frac{2}{5}</math> miles. How much longer is Jeffrey's bus ride than Mike's?</i></p> <p><i>Subtract. Remember to subtract whole numbers from whole numbers and fractions from fractions.</i></p> $17\frac{4}{5} - 8\frac{2}{5} = 9\frac{2}{5}$ <p><i>Jeffrey's bus ride is <math>9\frac{2}{5}</math> miles longer than Mike's bus ride.</i></p>	<p><i>At the end of a soccer game, the head coach noticed that the jug of water, which had initially contained <math>7\frac{2}{3}</math> gallons, was down to <math>3\frac{1}{3}</math> gallons. How many gallons of water had been consumed?</i></p> <p><i>Subtract. Remember to subtract whole numbers from whole numbers and fractions from fractions.</i></p> $7\frac{2}{3} - 3\frac{1}{3} = 4\frac{1}{3}$ <p><i><math>4\frac{1}{3}</math> gallons of water had been consumed.</i></p>	<p><b>Post-Test: Fractions &amp; Decimals</b></p> <p><b>Post-Test: Time</b></p>



Group Activities	<b>Revision Group - Names</b>	<p>Work with this group to create a range of equivalent fractions e.g. <math>\frac{3}{4} \times \frac{5}{5} = \frac{15}{20}</math>. So, <math>\frac{15}{20}</math> is equivalent to <math>\frac{3}{4}</math> as they were both multiplied by the same number. Some students may need images to help visualize the equivalence.</p> <p>Using cards or dice, create a range of like fraction problems for addition and subtraction. While working with this group, model if possible how to simply fractions e.g. <math>\frac{6}{9} = \frac{2}{3}</math>.</p>	<p>Working with this group, create <b>addition</b> mixed numeral problems and continue explicitly modelling using a whiteboard. Students write answers to problems in their workbooks.</p> <p>Easy examples to model:  <a href="https://www.mathworksheets4kids.com/fractions/addition/like-mixed-easy-hor1.pdf">https://www.mathworksheets4kids.com/fractions/addition/like-mixed-easy-hor1.pdf</a></p>	<p>Working with this group, create <b>subtraction</b> mixed numeral problems and continue explicitly modelling using a whiteboard. Students write answers to problems in their workbooks.</p> <p>Easy examples to model:  <a href="https://www.mathworksheets4kids.com/fractions/subtraction/like-mixed-easy-hor1.pdf">https://www.mathworksheets4kids.com/fractions/subtraction/like-mixed-easy-hor1.pdf</a></p>	<b>5/6M Town Groups-Based on Continuum Clusters</b>	<p>Provide students in this group less with a <a href="#">12 and 24-Hour Clock Template</a> as a scaffolding template. Work with this group to solve conversion of time problems between 12 to 24-hour and vice versa. Ensure that these students record these conversions in their books.</p>
Group Activities	<b>Middle Group- Names</b>	<p>Students revise both equivalent fractions as well as adding and subtracting like and unlike fractions. Provide this group with a range of task cards that include: fractions to make 3 equivalent fractions e.g. <math>\frac{5}{6} = \frac{10}{12} = \frac{20}{24} = \frac{40}{48}</math> (x 2/2). adding and subtracting like fractions e.g. <math>\frac{3}{7} + \frac{2}{7} = \frac{5}{7}</math>.</p> <p><b>Extension:</b> adding and subtracting unlike fractions e.g. <math>\frac{7}{9} - \frac{2}{3}</math> (x 3/3) = <math>\frac{7}{9} - \frac{6}{9} = \frac{1}{9}</math>.</p> <p>Students answer task cards in their books and work through as many cards as they can (<i>color code each topic e.g. equivalent fraction task card blue cards etc.</i>).</p>	<p>Students complete a range of mixed number fractions using addition. Students must show all working out of each step.</p> <p>Example of activity:  <a href="https://www.math-drills.com/fractions/fractions_add_mixed_easy_001.pdf?v=1360865604">https://www.math-drills.com/fractions/fractions_add_mixed_easy_001.pdf?v=1360865604</a></p>	<p>Students complete a range of mixed number fractions using subtraction. Students must show all working out of each step.</p> <p>Example of activity:  <a href="https://www.math-drills.com/fractions/fractions_subtract_hard_001.pdf?v=1360864244">https://www.math-drills.com/fractions/fractions_subtract_hard_001.pdf?v=1360864244</a></p>	<b>5/6M Town Groups-Based on Continuum Clusters</b>	<p>Provide group with a range of 12 to 24-hour and 24-hour to 12-hour conversion task cards. Students will work together to convert these times and answer questions in their books.</p> <p>Example of task cards questions:  <a href="https://www.math-salamanders.com/image-files/24-hour-time-conversion-24-to-12-hour-clock-1ans.gif">https://www.math-salamanders.com/image-files/24-hour-time-conversion-24-to-12-hour-clock-1ans.gif</a></p>
Group Activities	<b>Main Group - Names</b>	<p><b>Extension:</b> Students in this group will revise adding unlike fractions involving 3 fractions to add at a time:  <a href="https://www.mathworksheets4kids.com/fractions/addition/3-addends-unlike-proper1.pdf">https://www.mathworksheets4kids.com/fractions/addition/3-addends-unlike-proper1.pdf</a></p> <p>Subtracting unlike fractions:  <a href="https://www.math-drills.com/fractions/fractions_subtract_hard_001.pdf?v=1360864244">https://www.math-drills.com/fractions/fractions_subtract_hard_001.pdf?v=1360864244</a></p>	<p>Students complete a range of adding mixed numeral numbers up to 60. Students are encouraged to show working out of each step and simplify if possible:  <a href="http://www.k5learning.com/worksheets/math/grade-6-adding-mixed-numbers-denominators-to-60-a.pdf">http://www.k5learning.com/worksheets/math/grade-6-adding-mixed-numbers-denominators-to-60-a.pdf</a></p>	<p>Students complete a range of subtracting mixed numeral numbers up to 60. Students are encouraged to show working out of each step and simplify if possible:  <a href="http://www.k5learning.com/worksheets/math/grade-6-subtracting-unlike-fractions-denominators-to-60-a.pdf">http://www.k5learning.com/worksheets/math/grade-6-subtracting-unlike-fractions-denominators-to-60-a.pdf</a></p>	<b>5/6M Town Groups-Based on Continuum Clusters</b>	<p><b>Extension:</b> Students will complete Stage 4 level Time worksheet page 35:  <a href="https://numeracyskills.com.au/images/pdfs/Mathematics_Stage_4_Diagnostic_Tasks.pdf">https://numeracyskills.com.au/images/pdfs/Mathematics_Stage_4_Diagnostic_Tasks.pdf</a></p>

<b>Feedback/ Exit Slip</b>	<p><b>Feedback –</b> Use the thumb method after explicit modelling to determine students understanding and where they will be placed for group activities.</p> <p><b>Marking Exit Slips –</b> Next to each students <b>Exit Slip</b>, the teacher will check students answers and will either write an: A = Achieved N/Y = Not Yet</p> <p>N/Y students will become your target group.</p>	<p><b>Revision:</b> <math>3/9 + 2/9</math> <math>9/4 - 6/4</math></p> <p><b>Middle:</b> <math>5/25 + 17/25</math> <math>19/20 - 13/20</math></p> <p><b>Main:</b> <math>3/5 + 3/8</math> <math>2/3 - 3/8</math></p>	<p><b>Revision:</b> <math>2\ 2/3 + 1\ 1/3</math></p> <p><b>Middle:</b> <math>5\ 2/9 + 2\ 6/7</math></p> <p><b>Main:</b> <math>16\ 1/8 + 23\ 2/9</math></p>	<p><b>Revision:</b> <math>3\ 2/5 - 1\ 1/5</math></p> <p><b>Middle:</b> <math>6\ 11/15 - 1\ 9/15</math></p> <p><b>Main:</b> <math>5\ 23/25 - 2\ 24/25</math></p>	<p><b>Conversion:</b> <b>Revision:</b> <math>5:00 = 6:30 =</math></p> <p><b>Middle:</b> <math>14:00 = 7:19 =</math></p> <p><b>Main:</b> <math>00:32 = 19:26 =</math></p>	<p><i>Students write 2 conversions of time: 12 to 24-hour and 24 to 12-hour time.</i></p>
<b>Extension/ Early Finishes</b>	<ul style="list-style-type: none"> <li>Students practice a range of fraction skills playing interactive games on BYOD devices. Example sites: <a href="https://www.mathplayground.com/fractions_mixed.html">https://www.mathplayground.com/fractions_mixed.html</a></li> <li>Fraction Hopscotch {Equivalent Fractions, Adding Fractions, and Mixed Numbers} - <a href="https://www.teacherspayteachers.com/Product/Fraction-Hopscotch-Equivalent-Fractions-Adding-Fractions-and-Mixed-Numbers-1074270">https://www.teacherspayteachers.com/Product/Fraction-Hopscotch-Equivalent-Fractions-Adding-Fractions-and-Mixed-Numbers-1074270</a></li> <li>Students answer a range of addition and subtraction word problems involving mixed numbers - <a href="http://www.math-aids.com/cgi/pdf_viewer_10.cgi?script_name=word_frac_add2mixed.pl&amp;dnums=2&amp;xinfo=0&amp;language=0&amp;memo=&amp;answer=1&amp;x=143&amp;y=5">http://www.math-aids.com/cgi/pdf_viewer_10.cgi?script_name=word_frac_add2mixed.pl&amp;dnums=2&amp;xinfo=0&amp;language=0&amp;memo=&amp;answer=1&amp;x=143&amp;y=5</a></li> <li>Matching game: students create a range of equivalent fractions and work in groups to match the cards together. The students with the most correct equivalent fractions wins the game.</li> </ul>				<ul style="list-style-type: none"> <li>Students concrete their understanding of 24-hour time with this 24-Hour Time Memory Game. Encourage more capable students to make up their own games using the cards from the <i>24-Hour Time Memory Game</i>, such as 'Snap' or 'Go Fish' – <b>Teach Starter Game</b>.</li> <li>Students create or complete a range of Time word problems - <a href="http://www.primaryresources.co.uk/maths/pdfs/timeprobs.pdf">http://www.primaryresources.co.uk/maths/pdfs/timeprobs.pdf</a></li> <li>Students list at least 8 things they do on a particular day of the week along with the time they do each activity. They then draw 8 clock faces and record these times on the clock faces. Students convert the times to 24-hour time. They use the 24-hour times and activities to draw a timeline using an appropriate scale.</li> <li>Possible questions include: How could you order the events according to the time taken?</li> </ul>	
<b>Reflection/ Registration</b>						

