Home Learning TV: Middle Mathematics

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| **Segment lesson planning details** |  | | | |
| Title for segment: | Netball Fundraising | | | |
| Year levels: Years 4-7 | 4-7 | | | |
| NZC learning areas: | Mathematics | | | |
| Purpose of lesson:  (What learners will learn) | Student will learn to:   * Work with improper and mixed number fractions * do addition and multiplication of fractions | | | |
| Success Criteria – students will be able to:  (how they will know when they have learnt it) | Students will be able to:   * convert improper fractions to mixed number fractions; * add, multiply, and divide fractions | | | |
| **Segment content/context details *(as appropriate)*** | | | | |
| Māori specific content i.e. the learning draws on Mātauranga Māori: | bk | Pacific specific content i.e. the learning is focused on Pacific knowledge: | |  |
| **Segment production details** | | | | |
| Equipment requirements: |  | | | |
| Copyright requirements:  Please be specific: Source (*Seven Sizzling Sausages* by Sam Smith –url link to the source), intended use (to demonstrate alliteration), and length (timings for video clips) |  | | | |
| **Segment links and attachments *(list all links to recordings or attachments, the source and confirm that copyright permissions are granted)*** | | | | |
| Links to recordings /resources |  | | | |
| Attachments |  | | | |
| **Segment plan content** | | | | |
|  | Teaching and learning activities linked to purpose | | High level script (key points/questions) | |
| **Activate**: Activating prior learning, knowledge of contexts and relationships |  | | Kia ora, Talofa lava, Bula Vinaka and Malo lelei. Today we are going to be learning about fractions. We will start with a counting activity. Can you count with me starting from ⅓ and counting in thirds. For example, ⅓, ⅔. 3/3….! Let's go!! (slide 2)  ⅓, ⅔, 3/3, 4/3, 5/3, 6/3, 7/3, 8/3, 9/3, 10/3, 11/3, 12/3, 13/3. Kaati! Stop. Can you see any patterns? Can they help you predict other answers without continuing to count?  Tell someone in your whānau what patterns you can see (15 seconds). Did you notice the repeating pattern on every second row? (slide 3)  Did you notice that every column increases by five thirds every row? So ⅓ + 5/3 = 6/3 and 3/3 + 5/3 = 8/3  Tino pai! Fantastic work! (slide 4) Now take another look at the table. Remembering our pattern, can you predict what *x* will be? (15 seconds)  Tu Meke! It is 15/3. Did you work it out by counting on to 14/3 and then 15/3?  Or did you work it out by saying 10/3 + 5/3 is 15/3, or did you work it out by following the pattern of 5/3, 10/3, 15/3?  What great mathematical thinkers you are! Now see if you can predict what *y* will be? (15 seconds)  Tu Meke! It is 19/3. Did you work it out by counting on in one-thirds or did you work it out by counting on in five-thirds or did you work it out by following the pattern?  Now can you tell us what *n* is? This time try and do it by just following the pattern.  Fantastic! It is 33/3!  Aue! They are funny looking fractions! Have you ever heard of improper fractions?  Fractions like 4/3s, 8/3s and 33/3s are known as improper fractions as they are bigger than one whole. This is when the numerator (the top number) is bigger than the denominator (the bottom number)  Right, let’s try and convert our improper fractions into mixed number fractions.  If 3/3s equals one whole what does 4/3s equal? (15 sec)  That’s right 1 whole and ⅓! (slide 5)  If 3/3s equals one whole what does 8/3 equal? (15 sec)  That’s right 2 wholes and 2/3! (slide 6)  If 3/3s equals one whole what does 10/3s equal? (15 sec)  That’s right 3 wholes and ⅓! (slide 7)  Let’s try one more example!  If 3/3s equals one whole what does 33/3 equal? (15 sec)  That’s right 33/3 equals 11 wholes because 11 x 3 = 33. (slide 8) | |
| **Learn**: Introducing learning  Reinforce routines, provide multiple exposure to concepts, and strategies. Scaffolding learning |  | | Here is our problem for today. (show slide 9)  (Presenter reads)  Maree has just had her house painted. She decides it looks so good that it makes the fence look shabby so she asks her daughter Vimi if her netball team would like to paint the fence the same colour to raise funds for their upcoming tournament.  Vimi works out that each panel of the fence will take 5/8ths of a can of paint and there are eight panels. There are 4 ½ cans of paint left over from painting the house. Will the team have enough paint to finish the fence or will they need to get mum to buy more paint?  Right…. how can we work this out?  First of all, let's work out what 4 ½ cans of paint is in eighths. (15 seconds).  (Slide 10) Well done! 4 cans is 4 x 8 eighths which is 32/8ths.  Half a can of paint will be 4/8 because 4 is half of 8. So, 32/8ths + 4/8 = 36/8ths. So, 4 and a 1/2 cans will be 36/8ths.  Now let’s work out if the netball team has enough paint.  I’ll give you a minute to think about this.  Here is one way of working it out.  Each whole is divided into eighths which represents 1 can of paint (slide 11).  ⅝ equals 1 panel of the fence. If we keep adding on ⅝ when we get to 7 panels, we have used 35/8. We only have ⅛ left so we cannot finish the last panel. (Slide 12)  Who did it this way?  You could also use a table. (Slide 13) | |
| **Respond**: Providing opportunities to use and practice |  | | This is one way of recording your thinking (show slide 13).  So, for panel one 5/8ths of the paint was used to paint the fence.  After two panels were painted 10/8 of the paint was used.  And after 3 panels 15/8 was used.  I wonder if you noticed a pattern? Tell your whānau if you see a pattern (15 seconds).  That’s right, for every panel, ⅝ of the paint is used. Now let’s figure out if the netball team has enough paint to paint the fence?  Each panel needs 5/8th of a can of paint. There are 8 panels so 8 times ⅝ equals 40/8ths.  However, they only have 4 ½ cans of paint so they only have enough for 7 panels. This means there isn’t enough paint to finish the job! (slide 14).  Did you notice that 40/8 is an improper fraction? Remember how we talked about improper fractions in the warm up. Improper fractions like 40/8 are called improper because they are bigger than one whole.  We could also say that 40 eighths, 40 (which is the numerator) divided by 8 (which is the denominator) equals 5 wholes, which in this case is 5 whole cans of paint. | |
| **Share**: Learner and parent reflection on learning and engagement and what they can do next |  | | So, let’s have a recap on what we have been learning about today.  We have learnt about improper fractions and that they can be converted into mixed fractions by dividing the numerator (this is the top number of the fraction) by the denominator (this is the bottom number of the fraction).  We also learnt about adding and multiplying fractions.  Aue!  That's a lot of great maths learning today! We hope you have all enjoyed today’s lesson. Ka kite ano! | |