Home Learning TV: Junior Mathematics

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| **Segment lesson planning details** |  | | | |
| Title for segment: | Making Putiputi | | | |
| Year levels *(e.g., Yrs1 – 3)*: | Yrs 1-3 | | | |
| NZC learning areas: | Maths - Number | | | |
| Purpose of lesson:  (What learners will learn) | Learners will learn to:   * notice patterns and relationships between numbers and apply these to solve problems * justify their thinking using the word *because* * use grouping or subtraction to solve problems | | | |
| Success Criteria – students will be able to:  (how they will know when they have learnt it) | Learners will be able to:   * see patterns and relationships between numbers. * use subtraction and grouping strategies to solve problems * justify their thinking using the word because. * interpret and represent their thinking with materials or as an equation. | | | |
| **Segment content/context details *(as appropriate)*** | | | | |
| Māori specific content i.e. the learning draws on Mātauranga Māori: | Links to Te Reo Maori Language; Putiputi (flower), numbers and greeting | Pacific specific content i.e. the learning is focused on Pacific knowledge: | |  |
| **Segment production details** | | | | |
| Equipment requirements: | Pegs, whiteboard, slideshow | | | |
| 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) | [Plumeria High-Res Stock Photo - Getty Images](https://www.gettyimages.co.nz/detail/photo/plumeria-royalty-free-image/511807151) | | | |
| **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 | Greeting and introduction to the lesson.  Introduce warm up  Give think time. Remind students to justify their thinking.  Discuss patterns found in number string  Generalise number facts  Extending the pattern.  Introduce next string.  Notice differences in patterns.  Show and explain patterns. Briefly touch on ten times bigger.  Link to practical application.  Link to patterns. | | (ad-lib a greeting). It’s great to see you for maths today.  Today, we are going to learn about:   * patterns and relationships between numbers * justifying our thinking using the word because and * using grouping or subtraction to solve problems   But first let’s warm up our maths brains!  Have a look at these number sentences [slide 2].  What do you notice? Turn and talk to someone and tell them what you see. If no one is with you, you can talk to a pet, a favourite toy, or even to yourself. Make sure you use the word ‘because’ to explain your thinking! [give 15 sec think time]  What did you notice? Did you see the pattern?  Let’s have a look together.  I can see that 6 + 2 = 8.  The next number sentence says 16 + 2 = 18. What is the same in both of these number sentences? [quick think]  Tumeke! That’s right! They both have an 8 in the ones place in the answer. (gesture to numbers)  When I look at all the answers in this number string, I can see that they all have an 8 in the ones place and that each number is also increasing by ten. Did you work out the last one?  Tino pai. [well done] It is 48.  If we had 106 + 2 what would it be? That’s right, it would be 108! [slide 3]  Let’s do one more. Here it is. Have a look and tell someone at home or a toy what you notice. [think time]  Look! I can see that 6 + 2 = 8. This is how our last number string started. But is the pattern the same? [slide 4]  Look at the next one, 60 + 20 = 80. What is the same in both of these number sentences? They both have 6 and 2 which makes 8, and 6 tens and 2 tens makes 8 tens [write on board].  I also noticed that each answer is ten times bigger than the one before.  Let’s have a look at the next number sentence. It says 600 + 200 = ? What do you think the answer is? Ka pai, it is 800 because we know 6 hundred + 2 hundred = 8 hundreds and I noticed that these numbers are 100 times bigger than the first number sentences here [point].  Using this pattern, what do you think the answer to 6000 + 2000 would be? Ka pai, it is 8000.  How does knowing this help us? [think time].  You’re right. If we know one fact, we can use it to help us solve other problems with the same or similar numbers. Maths is all about patterns. When you can notice and use these patterns, it can make learning mathematics easier. It can also make learning it a lot more fun. | |
| **Learn**: Introducing learning  Reinforce routines, provide multiple exposure to concepts, and strategies. Scaffolding learning | Introduction of task and activating prior knowledge.  Launch of task  Resources: 10 pegs/whiteboard or slideshow  children solve  Presenter models how to solve.  Brings in mathematical number sentence visual (slide 6) | | Today we are going to use some things we have around our house to make a putiputi (flower). (PowerPoint slide 5)  I have some pegs here that I am going to use to make some putiputi. You might decide to use some objects from around your house to build the putiputi, like pens or blocks, or you could draw them. Or just follow along with as we go.  Let’s count them (presenter to count pegs)  tahi, rua, toru, whā, rima, ono, whitu, waru, iwa, tekau  Ka Pai, we have 10 pegs, so that means we have 10 petals.  A peg is going to represent a petal on our putiputi  and each putiputi is going to have 5 petals.  How many putiputi could we make if we had 10 petals in total?  Can you explain how you got to your answer?  Remember to use the word ‘because’ to explain your thinking  (think time)  Awesome. (Presenter to make a flower)  We know that each putiputi needs 5 petals. So, I am going to use 5 pegs to make a putiputi (clearly show using pegs).  And I will use the other 5 pegs to make another putiputi.  Ka Pai, how many putiputi have we made?  e rua nga putiputi I hanga matau (we have made 2 putiputi)  That’s right, we have made 2 putiputi and used all 10 pegs  Tumeke!  We have represented our thinking using pegs as our material but we could also represent the maths by using a number sentence.  There are different ways we could represent this mathematically, but let's write it as a subtraction equation.  Talk to your whānau - what do you think this could look like?  (wait time)  That’s right we started with 10 pegs and subtracted 5 to make 1 putiputi, leaving us with 5 pegs left. (write 10-5=5) [slide 6]  Then we made our second putiputi using the leftover 5 pegs. We have used all 10 pegs and made 2 putiputi in total.  (5-5=0). | |
| **Respond**: Providing opportunities to use and practice | Launch of task  Resources: 25 pegs/whiteboard or slideshow  children solve  Presenter models how to solve.  Brings in mathematical number sentence visual (slide 7)  Presenter connects subtraction to division (slide 8)  Continued extension of division  Presenter connects subtraction to division (slide 9) | | What if we had 25 pegs? Remember that each putiputi has 5 petals. How many putiputi could we make now? You could use materials or write number sentences like we did before.  Just like last time, can you explain how you came up with your answer?  Remember to use the word because to explain your thinking  (think time)  Wananei! Awesome!  We know that each putiputi needs 5 petals. So, I am going to use 5 pegs to make a putiputi (clearly show using mathematical equations).  We started with 25 pegs. We subtract 5 pegs for the first putiputi, we now have 20 pegs left (25-5=20).  (Presenter to write equation and manipulate materials or draw) [slide 7]  Then subtract another 5 pegs for another putiputi, we now have 15 pegs left (20-5=15).  Then subtract another 5 pegs for another putiputi, we now have 10 pegs left (15-5=10).  Then subtract another 5 pegs for another putiputi, we now have 5 pegs left (10-5=5).  Then subtract another 5 pegs for another putiputi, we now have 0 pegs left (5-5=0).  Wow! That is some awesome maths!  How many putiputi did we make?  (wait time)  Let’s count them.  tahi, rua, toru, wha, rima  Kai Pai! That’s right!  e rima nga putiputi I hanga matau  We have made a total of 5 Putiputi (flowers) altogether.  We can see that 25 pegs shared into equal groups of 5 gives us 5 putiputi which is the same as 25 divided by 5 = 5. To write this we get to use the cool division sign. (write equation 25 ÷ 5 = 5) [slide 8]  How cool is that? Repeated subtraction is also the same as division!  If we had 50 pegs now and we divided 50 by 5 to make putiputi (presenter to write 50 ÷5) How many putiputi would we make? (Wait time)  How did you work on it? Did you draw a picture? Did you think how many groups of 5 are there in 50?  Can you explain your thinking? How did you come up with your answer?  Tino pai! 50 pegs would make 10 putiputi because there are 10 groups of 5 in 50.  (Presenter to write 50 ÷5 = 10)  [slide 9] | |
| **Share**: Learner and parent reflection on learning and engagement and what they can do next | Recap of learning intentions.  Recap using repeated subtraction as division  Opportunities for students to discuss after the lesson  End of lesson. | | Wow! What an awesome day of pangarau we have had.  We looked at patterns in a number string.  We used pegs to represent our thinking, using them as petals for each putiputi.  We were able to explain how each time we subtracted a group of pegs we made 1 putiputi and we could even show this by writing number sentences.  How great is it that we can use what we know to solve a division problem, like using our repeated subtraction?  Whilst we used repeated subtraction and division to solve our problems today, we could have used repeated addition or multiplication. Have a think about that. You could try and work out a problem on your own, you might even like to try using repeated addition or multiplication for it.  Pangarau has multiple patterns and connections, we can solve our problems in all different ways. Not many people realise this, but maths can be very creative! It also can help you solve everyday problems, like how many pegs you would need to make an art project with flowers. Can you think of other times when maths would have helped you?  Ka kite! See you next time for more fun maths! | |